THE FAR EASTERN REVIEW

COMMERCE • ENGINEERING • FINANCE

VOL. V. MANILA, P. I., SHANGHAI, AND YOKOHAMA, MAY, 1909 No. 12.

HARBIN: THE AFTERMATH OF RUSSIA'S ADVENTURE

By GEO. BRONSON REA.

Shanghai, April 26th, 1909.—One of the greatest achievements in city construction witnessed by the world has been carried on by Russia in the heart of Manchuria. Americans are familiar with mushroom towns which have grown into cities of prominence, but behind all such growths there have been invariably some tangible commercial reasons for rapid development. The same has been witnessed in other parts of the world, where large towns and cities have sprung up owing to a mining boom, or the opening up of new fertile country. But Russia has shown the world how to design and create a city, overnight as it were, to further her political designs and expand her influence in the Orient.

In the building of such cities as Vladivostok, Port Arthur, and Dalny, Russia clearly exposed her policy on the Pacific, and her determination to obtain a preponderating influence in China, while in Harbin, an altogether different type of activity was displayed, in which her industrial ambitions were disclosed.

In September 1896, the agreement between the Russo-Chinese Bank and the Chinese Government was concluded for the construction and management of the Chinese Eastern Railway. This was the link which was to bind the Pacific littoral with the great Trans-Siberian Railway, through Chinese territory in northern Manchuria, thus avoiding the greater task of

(Continued on page 423.)

MAJ.-GEN. HORVATH,
GENERAL MANAGER AND CHIEF OF THE RAILWAY STAFF OF THE C. E. RY., THE DOMINANT SPIRIT OF HARBIN

VICTOR F. LUBA,
RUSSIAN CONSUL-GENERAL AT HARBIN, WHO WAS RECALLED

PRINCE KHILKOFF,
CHIEF ENGINEER AND ASSISTANT CHIEF OF THE C. E. RY. STAFF, HARBIN

MAJ.-GEN. CHICHAGOFF,
CHIEF OF THE RAILWAY GUARDS, HARBIN

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PUBLISHER

WILLIAM CROZIER, Editor.

COMMERCE :-: ENGINEERING :-: FINANCE

A Monthly Review of Far Eastern Trade, Finance and Engineering, Dedicated to the Industrial Development and Advancement of Trade in the Philippines and Far Eastern Countries

PUBLICATION OFFICE:
MANILA, PHILIPPINE ISLANDS

CHINA OFFICE
WHITEAWAY LAIDLAW BUILDING
Shanghai

UNITED STATES REPRESENTATIVES:
J. ROLAND KAY CO.
Teutonic Building, Chicago, Ill.

GREAT BRITAIN:
PROBSTHAIN & CO.
14 Bury Street British Museum, London, W. C.

SUBSCRIPTION AGENTS:

HONGKONG	KELLY & WALSH, LTD.
SINGAPORE	" " " "
YOKOHAMA	" " " "
SHANGHAI	" " " "
TIENTSIN	TIENTSIN PRESS, LTD.
WASHINGTON, D. C.	BRENTANO'S.

SUBSCRIPTION RATES: Philippines, United States, Canada, and Mexico, $2.50 U. S. C. per year. To all other countries in the Postal Union, $3.00 per year. Single copies 25 cents, U. S. C.

ADVERTISING RATES will be mailed on application.

Communications pertaining to the Editorial Department should be addressed to THE EDITOR.

ENTERED AT POST OFFICE, MANILA, P. I., AS SECOND CLASS MATTER.

MANILA, SHANGHAI AND YOKOHAMA, MAY, 1909

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RECENT PHILIPPINE APPOINTMENTS AND THE CIVIL SERVICE

The recent promotion of Mr. Frank A. Branagan, Treasurer of the Philippine Islands, to the position of Commissioner, of Deputy Treasurer, Mr. John L. Barrett, to succeed Mr. Branagan as Treasurer, and the promotion of Mr. William H. Clarke, Deputy Auditor and Acting Auditor of the Philippine Islands, to the position of Auditor, is the most striking evidence that President Taft proposes to ignore any claim to appointment in the Philippine service but that of merit and length of service. The notorious "spoils system" that has heretofore served to destroy every attempt at establishing a permanent and healthy civil service will not be allowed to interfere with the perfecting of the system in the islands. The payment of political debts by appointments that would cheat a faithful and meritorious official out of his just promotion will not be a feature of the policy of this administration. And the wisdom of such a course is very evident to those familiar with the difficulty experienced by the administration in the Philippines, heretofore, when there were no certainty that broken down politicians would not be pensioned off there. The general feeling of appreciation of these appointments is most gratifying to the department chiefs, and evidence of it is taking the form of the desire of many members of the service to remain permanently, who were seriously considering the advisability of returning to America and starting a career anew.

The promotion of these men is recognized as the reward of the most faithful service under the most trying conditions. They have to show for their work the perfect organization of the Bureau of the Treasury and the Bureau of Audits. When it is remembered that there was no precedent in modern accounting upon the arrival of the Americans in the islands and the work in its initial stage was confined to organization and to perfecting a system of audits to meet conditions with which few, if any Americans were familiar, it is remarkable the success that has been attained by the Bureau of Audits in a short decade. To Mr. Clarke is due the present satisfactory system evolved and his promotion was a just recognition of his valuable service to the administration and the islands.

The same might be said of the Treasurer's office. Mr. Branagan came with the Taft commission and has been the head of that bureau ever since. He is the father of it, having directed its organization and the perfecting of the machine which is taking care of Uncle Sam's wealth so thoroughly. In this work he has had the assistance of Mr. Barrett, a young man of marked ability who has earned his reward.

THE AMUR RAILWAY

With the ratification of the Portsmouth Treaty, the political and strategic advantages of the Chinese Eastern Railway were rendered useless by Article VII, which debarred Russia from using the line for military transport. Checked in her designs on Manchuria, and prohibited from carrying out her ambitions on the Pacific, by destroying her strategic line of communication, Russia determined to safeguard her interests and build an all Russian road through her own territory. Japan is within striking distance of the present Manchurian highway to the Pacific, and in the event of future hostilities the link binding the Ussuri province with the mother Country would be broken, with the certainty of the loss of the Pacific littoral and perhaps the Pri-Amur region and Trans-Baikalia.

It was not without great opposition that the Government Bill for the construction of the new railway succeeded in passing the Duma. Starting at Stetinsk, it will skirt the Amur river along its northern bank to Harvorovsk, making connections there with the Ussuri Railway for Vladivostok. The Government emphasized the urgent necessity of developing the natural resources of the region traversed by the road and bring her distant provinces into communication with the heart of the Empire. The idea that the road was to be built for strategic purposes was deprecated and it was pointed out that opposition to its construction was equivalent to advocating cutting adrift the Pri-Amur and the Ussuri, the best districts for colonization in all Siberia. Without the Amur railway, this immense and valuable frontier could never be thoroughly colonized or developed.

Despite, however, all assurances to the contrary, the world will view the construction of this road as the first step in Russia's set desire to regain her lost position and prestige in the Orient. At present, the region traversed by the road is so cold that the mean annual temperature is several degrees below freezing point. Dense forests line the banks of the Amur and cover the country for miles back. Cereals grow very poorly, and the productivity of the soil is insufficient to meet any great increase in population. The population is sparse, and a huge colonization scheme will have to be forcibly carried out to compel settlement.

Under the direction of the Ministry of Agriculture at St. Petersburg, an emigration campaign has already been organized and is being prosecuted with all the funds available. Even this has not led to any great increase in the Pri-Amur, the settlers prefering the Altai regions or the Maritime Provinces. The importance of the Amur colonization is, however, highly appreciated by the Government, and the machinery is being perfected to bring about the desired result. Up to 1906 $1,300,000 gold had been appropriated for the work, and that year the sum of $2,800,000 was set aside. In 1907, $6,750,000 gold was provided, and last year, 1908, $9,500,000. As a return for this expenditure in 1906, some 30,000 families or 180,000 persons were sent out, in 1907, 68,500 families or 400,000 persons, while in 1908 it is estimated that 100,000 families with 600,000 persons were located in Eastern Siberia. But most of these settlers have followed system and determination in their selection of homes and the movement was chiefly in the direction of the Altai regions while there was a marked increase in the settlement of the Maritime Province. The Amur district was passed by for more promising and fertile lands.

The passage of the Act, authorizing the construction of the Amur Railway, had these conditions in view, as it was stipulated that it must be built by Russian labor. The government hopes to complete the line by 1912, at an estimated cost of $110,000,000 gold. To accomplish this an army of labor must be transported. The severity of the climate and the short working day reduces the four years to less than half that time as compared with similar work in temperate zones. At least 200,000 men would be necessary to complete the line in this time, and once there a large percentage will remain permanently, and form a nucleus for future increase in population. The engineering difficulties of the line are many, and present problems not encountered in other Russian railways. Probably the two most important problems will be the passage of the Kinghan mountains and the bridging of the Amur at Harboroosk.

—G. B. R.

JAMES F. SMITH, GOVERNOR-GENERAL OF THE PHILIPPINES

The departure of Governor-General Smith on six months' leave and the prospect, if his own wishes are respected, that he may enter other fields of activity in the homeland of America, was the occasion in Manila for the manifestation of the depth of affection for this democratic Californian held by all classes and nationalities in the islands. Perhaps no man, with the exception possibly of Governor-General Wright, made more personal and enduring friendships during his term as Executive than James F. Smith. When he undertook the duties of office, he gave as his motto the expression "Pull Together," and it might be said that his whole administration policy encouraged, and successfully, that sentiment among all classes and interests in the islands. He simply paraphrased General Wright's advice when at a press banquet he said to the pressmen, "We are all in the same boat together. Now do not rock the craft, just for the pleasure of hear-

ing the ladies shriek." General Smith was a great admirer of Wright and Ide. He was ever giving credit for any success attained to these two predecessors, who, he said, "Prepared the way and made it possible for me to accomplish nything with any degree of success." He was entirely unselfish and expected no credit for his work. He always said that all his success was largely due to those who served him faithfully as soldiers and in the different departments of which he has been the head. Indeed, all his utterances on the eve of his departure were those of a modest, unassuming citizen, who believed that he had been specially favored by Providence in his career.

Perhaps the most desirable outcome of his administration has been the improved relations with the neighboring sections of the Far East. General Smith has added to the historic hospitality of Malacañan. He made it typical of true democracy as the wellbred American gentleman understands it. It made an impression upon those visitors from Far Eastern sections that was, to say the least, a revelation. And the sincerity that characterized his relationship to one and all, made many lasting friendships among men of every nationality.

Every commercial and social organization in Manila paid tribute to the General. Many were the sincere expressions of love and affection for the man and the official. Of these manifestations he said, "It is now on the eve of my departure that I realize how deep the influence of association is rooted. The eleven years spent here have made friendships of a lasting character. To separate from them is much more painful than I could have anticipated. They form themselves almost without our knowledge, and we have our realization of them in full measure when we come to the point of separation and then only do we fully appreciate its significance. I have appreciated the touching evidences of personal affection for me and I am more than gratified to know that I have the love and regard of the men who fought with me in the field, of those who aided me in my administration, and of those whom I have met socially and in a business way. The sincerity of it all touches me deeply."

James Francis Smith was born in San Francisco January 28th, 1859. He graduated from Santa Clara College in 1878 with the degree of A.M. He then attended the Hastings Law School and was admitted to the bar of San Francisco in 1885. He practised law in San Francisco and was thus engaged when the war broke out in 1898 and he was chosen Colonel of the First California Volunteer Infantry. He arrived in the Philippines with his regiment on June 30th, 1898, and participated in the capture of Manila, August 13th of that year. He was appointed Deputy Provost Marshal of the city and served as president of a military commission, and on October 22nd was put in charge of a brigade in the first division, Eighth Army Corps. He was a member of the commission appointed to treat with Aguinaldo. At the outbreak of hostilities he participated in the battle of Santa Ana, San Pedro Macati, Pateros, Taguig, and it was said of his activity that he would have captured Pasig had not his victorious troops been recalled to strengthen the American ine. As an old sergeant of his regiment put it, when referring to this incident, "If they hadn't caught Jim Smith when they did, we'd be sure going yet." He was commended for gallantry in action on this occasion, and on March 1st, 1899, was put in command on the Isle of Negros until the arrival of General Hughes. Later he was appointed Military Governor of Negros and commissioned Brigadier General. His next post was that of Insular Collector of Customs, and later he received the appointment which, as he says himself, was his highest ambition, that of member of the Supreme Court of the Philippines. Here he expected to remain and follow his natural bent. But Taft was looking for timber of the right caliber and he chose the General as a member of the Commission. It was with reluctance that he accepted this honor, yet he felt it was his duty to serve where his chief needed him, but he always pined for the bench. He was later appointed Vice-Governor, and, upon the retirement of Governor Ide, became Governor-General. This last honor he did not want. It was practically forced upon him. He undertook it with many misgivings and urged that some one else from among the members of the commission be chosen. He was finally induced by his friends to accept. For the last year he has been endeavoring to be relieved, but without success, and finally he sent in his resignation the first of the year to President Taft. It has not yet been accepted He was granted six months' leave and invited to Washington to talk it over. If Taft can talk him over he will come back. He has served faithfully and well and would be a severe loss to the administration, should he sever his connection at this time.

Governor-General Smith was ever ready to co-operate with American, foreign, and native enterprise in the islands along the lines of legitimate development, and for this reason alone, by his retirement at this time, the Philippines would lose a man whose influence is sorely needed.

W. CAMERON FORBES, ACTING GOVERNOR-GENERAL OF THE PHILIPPINES

The assumption of the duties of Executive upon the departure of Governor-General James Smith from the Philippines by Vice-Governor Forbes as Acting Governor-General, marks the advancement to that position, for the first time, of a business man. Heretofore the Executives were chosen from among the members of the bar, and it was natural that during the constructive period of legislative enactment this should be so. As evidence that it was the purpose of the Taft administration to have the commercial interests represented, Mr. Forbes was induced to take a hand in Philippine affairs, and, as secretary of Commerce and Police, he inaugurated many reforms and innovations designed to serve the best interests of the commercial community. In recognition of this work he was named Vice-Governor which placed him in line of promotion for the Governor-General's place. So that for the present he serves as Acting Governor-General and, if General Smith retires as he proposes to do, Mr. Forbes will succeed him.

W. Cameron Forbes was born in Milton, Mass., in 1870, and graduated at Harvard with the degree of A.B. After his graduation he associated himself with the firm of Messrs. Jackson & Curtis, of Boston, and later as auditor of the well-known firm of Messrs. Stone & Webster of that city, and one of the most prominent firms of the United States, having control as General Managers of many systems of electric railways, plants, and industrial enterprises. He became a member of the well-known firm of Messrs. J. M. Forbes & Co. of Boston in 1899, and his duties as official and director of many companies gave him a wide experience in financing and directing large undertakings.

It was in 1904 that Mr. Forbes was prevailed upon to give the Commission and the Philippines the benefit of his natural gifts and his wide experience in commercial matters. That body was short of a representative of the commercial interests. The result was the ineffectual coastwise shipping was overhauled and reorganized under Mr. Forbes' direction. Schedules were made and the shipping firms encouraged to maintain them by substantial government patronage. He carried into effect the plan to provide a system of railways throughout the country and to construct permanent roads. He solved the problem of maintenance and, through the Bureau of Public Works, made for permanency in all kinds of construction in the islands. The removal of strictures on the shipping in the port, the arrangement of the new port works and the construction of warehouses on the new-made ground for the reception of imports, and in a thousand ways Mr. Forbes urged better facilities for handling the shipping in the harbor. Then he took up the subject of irrigation. He recognized that the commerce of the country depended upon the development of the agricultural industry. He assiduously applied his best effort to interest his co-legislators in this enterprise with the result that a well-defined scheme is now under way.

He has many other plans for the improvement of trade conditions, and, during his term, it is reasonable to expect the greatest degree of encouragement in every line of commerce and industry.

As a citizen, Mr. Forbes has been identified in every movement tending to help the Philippines get a hearing abroad. He not only approves but digs down in his pocket when occasion requires. This application of a well developed public spirit has made Mr. Forbes a most popular official. And he is modest about what he has accomplished. Like General Smith, he is ever leaving the praise to others while he proceeds to accomplishment.

Mr. Forbes is the first bachelor to assume the duties of Governor-General. He is turning his 40th year and, in point of wealth, independently rich. A man of simple tastes, fond of outdoor exercise, he is a typical American gentleman of the old school. He is an official who will make many friends for the islands.

THE FAKUMEN RAILWAY QUESTION

(From our Own Correspondent)

Shanghai, April 30th, 1909.

The Fakumen Railway incident still engages the attention of China and Japan and continues to furnish the press with occasion for pointed references to Japan's unfriendly attitude in opposing China's development and blocking the execution of a British contract. Notwithstanding the dignified position of the British Government in refusing to listen to popular clamour and recognize in Japan's policy an infringement of the Open Door principle, the interests leagued with China persist in agitating the question.

This dispute has held public attention for a long time, and the arguments of both sides have been vented freely in the press and diplomatic circles. From a careful review of the facts it is, however, becoming more and more evident that China has overreached herself and that there is more behind this matter than an insignificant railway extension of 50 miles. In fact, the incident is beginning to savor of a carefully planned and skillfully carried out intrigue to embarrass Japan and foment a spirit of antagonism in Great Britain against a renewal of the alliance.

The Treaty of Portsmouth bound the signatory Powers "not to obstruct any general measures, common to all countries, which China may take for the development of commerce and industry in Manchuria," but Japan subsequently secured from China, in a secret Protocol to the Peking Agreement of 1905, the promise "not to construct, prior to the recovery (by China) of the (South Manchuria) Railway, any line in the neighborhood of, and parallel to, that Railway, or any branch line which might be detrimental to the interests of the South Manchuria Railway."

China's rights, which were thus amply protected by the Portsmouth Treaty, were again placed in jeopardy by her own diplomats in the later agreement with Japan. With all her past bitter experiences to guide her, and confiding her interests in the hands of her most experienced officials, China blindly bound herself to another surrender of rights, and paved the way for future troubles.

One of her most skilled and astute diplomats, Tang Shao Yi, a Columbia graduate, attended the conferences with the Japanese Plenipotentiaries, leading up to the final signing of the Agreement with its secret protocol, and he was therefore in full possession of all the facts and conversant with all the points at issue. There appears to be no doubt that the full significance of this secret clause was appreciated by China, for it is part of the records of the discussions that its bearing on future railway construction in Manchuria was carefully considered. It is also recorded in the published reports of the American State Department that, when questioned by the American Minister at Peking about this self denying clause, Tang Shao Yi categorically denied its existence. Tang was subsequently appointed Governor of Mukden on the organization of Manchuria into a vice-royalty, and shortly afterwards initiated the secret negotiations

which terminated in the signing of the agreement with Lord French for the construction of the Fakumen extension of the Imperial Railways of North China, and with J. O. P. Bland acting for the British and Chinese Corporation for the loan. This work was therefore carefully planned and entered into on the initiative of one of the high Chinese officials thoroughly familiar with the stipulations of the secret clause, and the storm that would be provoked by an attempt to prove its practical application to the situation in Manchuria.

The singular fact inferred from this action on the part of H. E. Tang Shao Yi, which was a complete reversal of policy on the part of China, compels the belief that the step was taken with the express design of forcing Japan's hand and testing the strength of the Peking Agreement, for as the clause was secret, Japan would necessarily have to make its provisions public, in the event of any infraction of the terms on the part of China.

For some years past China has endeavored to recover some of the rights signed away by former inexperienced officials, and especially to regain control of her railways, and as far as possible construct future roads with her own capital. The Imperial Railways of North China, as its title indicates, is an enterprise controlled by the Imperial Chinese Government, with a British engineer in chief, imposed by the loan agreement of 1899. It is one of the most profitable railway enterprises in the world. The line is 600 miles long, and represents a total capital investment of $49,394,426 (Mexican), of which amount $27,600,000 (£2,500,000) was secured as a loan from British capitalists in 1899 at 5 per cent interest. The balance of the capital, $21,994,428, is held by the Imperial Chinese Government and native shareholders. The ratio of expenses to earnings in 1906 was 28 per cent, in 1907, 37 per cent, in 1908, 28 per cent. The receipts last year were $11,067,677, and expenses $3,075,567, leaving a credit balance of $7,992,110, which, added to the credit balance carried forward from the previous year of $6,658,763, made a total of $14,650,875 for expenditure. After paying the fourth installment on the loan and interest, Chinese shareholders and other general expenses, and applying $3,839,288 towards the construction of the Peking-Kalgan Railway, there was still a credit balance of $6,296,215. In fact the surplus profits of this line are not only sufficient to carry on the construction of the Kalgan railway, but have also been pledged to guarantee the interest on other railway loans.¶

Here is a road which not only provides for all its own improvements, branches, and all charges, but is actually building another 200 mile road, and also the rolling stock for various native roads in its car shops, and guaranteeing the interest on loans to construct others, all under Chinese supervision and free from foreign interference. The actual expenditure on capital account for the existing 600 miles of road is a little over $80,000 Mexican per mile, and at this high rate an extension of 50 miles costing $4,000,000 could readily be undertaken out of the present credit balance of the road, especially as the work would take two years to complete, and the expenditure spread out accordingly. Yet, despite the existing bitter opposition to unnecessary foreign loans, and the undoubted financial and engineering ability of the Imperial Railways of North China to carry on the work under its own supervision, it was considered necessary to build this little insignificant 50-mile extension to reverse the policy of the country and resort to a foreign loan, placed in Great Britain and its construction contracted for by a British company.

There is only one interpretation to this enigma. China, in her defenseless condition, could not successfully disregard Japan's opposition to the secret clause, and so adroitly laid her plans to secure powerful foreign assistance to carry her point, and ascertain Japan's interpretation of its meaning, and her future intentions. As British capital was already interested in the loan of the I. R. N. C. it was hoped that this fact in addition to the influence of the alliance would result in Japan consenting to the execution of the contract.

The remarkable cleverness and diplomacy of Tang Shao Yi in enlisting this aid, by contracting with Lord French for the construction of the road, and with the British and Chinese Corporation for the loan, before Japan learned of his intentions, is only surpassed by the blind acquiescence in the scheme by the general public, and the acceptance of China's side of the dispute, because British interests were involved. British and American diplomats have also been adroitly led to report favorably on China's rights in the dispute, and the press generally has followed the same course.

The refusal of the British Government to interpret Japan's attitude as threatening the doctrine of equal opportunities, and interfering with China's development has perplexed the leading British organs interested in Chinese affairs. To the disinterested observer, however, this position seems entirely consistent and comprehensible. In addition to a suspicion that the Fakumen scheme was "a put up job" to discredit Japan, China has permitted the world to gain an insight into her future intentions to prolong the railway northwards to Tsitsihar and thence on to Aigun, with a branch to Kwang-cheng-tse to connect with the Kirin Road. While Japan might generously waive her interpretation of the secret protocol and permit the extension to Fakumen, without it resulting in any material damage to the interests of the South Manchuria Railway, she would naturally view with deep concern the establishment of a principle which would ultimately menace her present strategic and commercial advantage in Manchuria. So it is quite conceivable that the fair-minded, conservative statesmen at the head of affairs in London, would extend their moral support to Japan in this question, and cement the alliance for powerful political reasons, rather than be made the instrument of Chinese political intrigues, or be guided by an appeal to protect a contract which was so evidently negotiated by China, for the set purpose of creating discord in the harmonious relations existing between the Allies.

China has proposed to submit this matter along with other issues to the Hague for settlement, but Japan has refused on the grounds that it can be settled out of court through regular diplomatic channels. This would indicate that Japan is willing to compromise and permit the extension to Fakumen at least. China's rights to develop her own territory are indisputable, but in this instance China has again hampered her liberty of action by signing ambiguous agreements. The wording of the document leaves its construction open to argument, and until a compromise is effected on the definite meaning of "in the neighborhood of, or parallel to, and branches detrimental to the Japanese road," both sides can place a wide construction on their meaning. The best friends of China must acknowledge that she has entered the agreement with her eyes open, and fully realizing the evils that could arise from a selfish interpretation of this self denying clause. The censure if any is not applicable to Japan, but to the high Chinese officials who having past experiences nimind, allowed themselves to set their seal to such an agreement.

Japan has the upper hand and is in the position to act generously, but the tactics pursued by China in bringing this issue to the front, and in refusing to give Japan credit for any honorable intentions, must result in her maintaining her present position. China's persistance in magnifying trifling incidents into matters of grave international importance, coupled with the campaign of vituperation indulged in by the native press, will not tend to mend matters.

Other powers have placed their own construction on the wording of treaties with China, and have insisted on the acceptance of their terms. Here is a matter in which Japan can with dignity maintain her position, and it is difficult to see how any other power can consistently reproach her for insisting on the terms of the secret agreement. In the event of a failure to secure an amicable settlement, it is perplexing to see how China can reap any advantage from the bad feeling engendered by her attitude.

G. B. R.

MANILA HARBOR

The favorable report of Captain Austin of the Minnesota on the new harbor at Manila, after he had swung at anchor there and taken advantage of his opportunity to make a thorough investigation, has done much to counteract the misleading reports current in shipping circles. In addition to this, the careful investigation of the harbor by a part of shipping men, pressmen and officials under the direction of Editor Taylor of the *Manila Bulletin*, resulted in satisfying all interests that there is more water there than indicated on the latest charts.

The result of the investigation also led to certain recommendations that are being carefully considered by the authorities and if approved will mean the closing of the gap and the better regulation of berthing vessels. The closing of the gap will give more protected space for anchorage during the monsoon season and the expenditure of a small sum would increase the depth and width of the channel round the end of the breakwater so as to accommodate any vessel. Then the regulations of the buoys under government control so that vessels could easily find their respective berths without confusion and in the order of first come first served, would be greatly appreciated.

Every effort is being made to meet every requirement of the shipping trade at Manila and the authorities have always encouraged foreign masters to register their criticisms so as to have the advantage of their viewpoint, since they are the men in the best position to appreciate any undesirable condition or unnecessary restriction.

COPPER MINING IN INDIA

The Semi-Independent State of Sikkim, situated just beyond Darjeeling and between that Hill Station and Thibet, is not only noted for its grand scenery, but is, owing to the enterprise of Messrs. Burn & Co., Ltd., of Calcutta, likely soon to be a factor in the copper production of the East.

A large number of copper mines have been located and some of them systematically developed for the last eighteen months with most favourable results, under the direction of Mr Charles Wilkinson, Mining Engineer.

The ore occurs in the form of copper sulphides, both in lodes and bedded deposits, and although these are not phenomenally rich, they are highly payable from a commercial point of view, averaging from 5 per cent. to 10 per cent. of copper throughout.

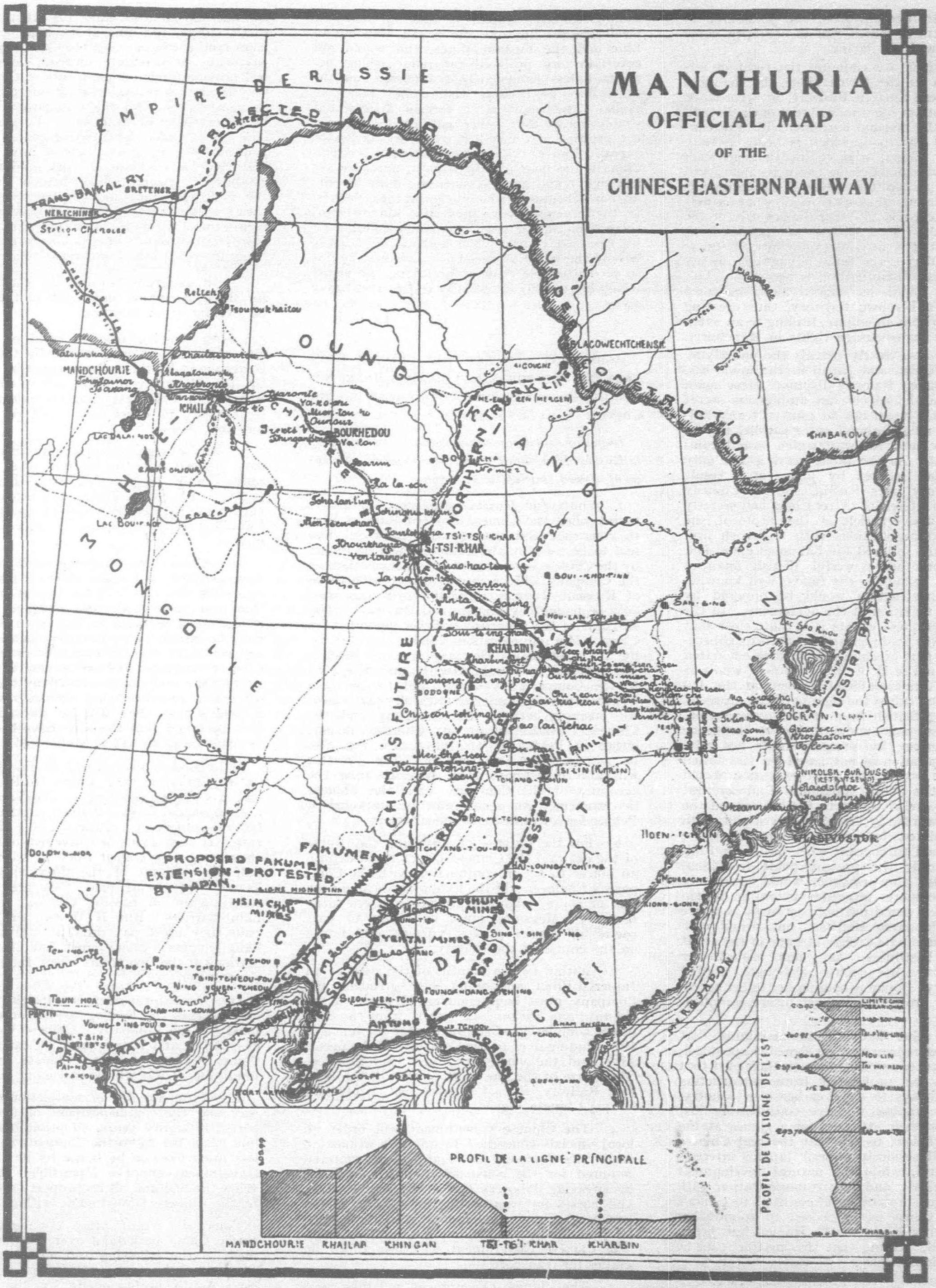
The copper ores are found in what is known in Indian Geology as the Daling beds of slates, and schists.

At Bhotang Mine, systematic development has disclosed several payable lodes, and the bottom of the winze 400 feet below the outcrops on the hill is now on a payable sulphide lode of 4 to 5 ft. in thickness.

Another rich sulphide lode, Dik Chu, has been traced for several hundred feet, and a tunnel driven on the strike of the lode into the hill is in payable mineral for the whole distance.

Altogether, close on 65 acres have been taken up, making a total of close on 8,000 acres which will be brought up to 32 square miles of country, in every half square of which is a copper deposit or lode, all held under the Indian Government regulations in Leases and Prospecting Areas.

Messrs. Burn & Co. have secured rights for water power, timber for charcoal making, and mining and building on most favourable terms. The labour is cheap and most efficient; the miners are mostly of the Mungar caste, who have for generations worked the surface for copper.—*Capital.*



THE STRUGGLE FOR AN EMPIRE

The above map illustrates present railway situation and the struggle for the commercial and political supremacy on the part of Russia and Japan, and China's plan to regain her lost advantages by the projected construction of the Fakumen branch, and its contemplated extension northwards to Tsitsihar and the frontier at Aigun.

The Treaty of Portsmouth, which gave the South Manchuria Railway to Japan, also prohibited Russia from employing the Chinese Eastern Railway for the transport of troops or other strategic purposes. In the event of future hostilities, Japan could quickly seize the main line of Russian communication, and isolate Vladivostok and Eastern Siberia. Against this contingency, Russia is now building the Amur Railway, entirely within her own bounda-

ries, and far removed from the possibility of Japanese attack, which will insure open communication with the Pacific.

The Russians are claiming the right of administration in the towns along the mainline of the Chinese Eastern Railway, in accordance with the terms of the standard text of the French version of the original agreement for the construction of the road, which is being bitterly opposed by China, who claims that no such authority was included in the agreement, and it fails to appear in their copies of the document. China has the moral support of all other nations with the exception of Japan in her side of the question. As the agreement in question controls the status of the South Manchuria Railway, Japan will derive the same advantages in her zones if Russia's contention is accepted. This means that China has signed away her own rights within her own territory, thus creating an empire within an empire, leading to an eventual loss of her sovereign rights in Manchuria.

The map also clearly reveals the underlying motives of China and Japan in the much discussed Fakumen Railway dispute. Here again China bound herself by an ambiguous secret protocol with Japan not to construct any railway in the neighborhood of, or parallel to, the South Manchuria Railway which would compete with it. As the latter road is the only tangible asset secured by Japan as a result of her victory over Russia, she is zealously guarding its interests. After China had secretly signed the above article in the protocol, she entered into negotiations with a British firm of Contractors to build the Fakumen extension, and with another powerful British financial corporation to supply the funds, well knowing that the construction would be opposed by Japan as a violation of the agreement. In the light of subsequent events it is quite clear that this move was made only after mature deliberation on the part of China, as the idea emanated from the mind of H. E. Tang Shao-yi, who was one of the Chinese officials present at the discussion which led to the signing of the protocol. By enlisting British support and co-operation, the purpose was undoubtedly to influence Japan's consent by pressure from her ally. Japan's opposition is not based on the actual competition which the short extension would create for the South Manchuria Railway, but on the purpose of China to further extend the road northwards, to Tsitsihar and Aigun, with a contemplated branch to Kwang-cheng-tse or Changchun to connect with the Kirin Railway. To cede the present point to China, and establish the principle, would ultimately lead to the more important extension northwards, which would not only seriously compete with the Japanese Railway, but would constitute a standing strategic menace in the event of future hostilities. As China has already signed away her rights—although worded ambiguously—Japan is holding her to her agreement, as a protection against future complications.

On the other hand China maintains that although her representatives signed the protocol, there was never any intention on their part that she would be prohibited from constructing further railways to develop her own country. Both sides appear to have considerable just grounds for their attitude, for a glance at the map is sufficient to see that the real Chinese scheme will seriously imperil Japan's interests in Manchuria, while the natural development of her territory and free communication with her Manchurian capitals is essential to China's progress. China has proposed to submit her troubles with Japan to the Hague, but Japan has refused, stating that the matter can be settled diplomatically.

The situation is one which, if allowed to continue, must sooner or later lead to strained relations. The natural solution of both questions is for China to purchase the Russian and Japanese roads, at whatever cost, and so regain control of her territory. Russia has been approached on the question, and has refused to consider it, unless China pays her price with money raised in her own country, without resorting to a foreign loan, which means that China in her present impoverished condition cannot comply. Japan is making vast expenditures to improve the South Manchurian Line and the Fushun Mines, and would not entertain any proposal for relinquishing her rights unless handsomely reimbursed, on the same lines as Russia—with money raised in China. The resort to a foreign loan would simply mean that other nations would gain the prestige in China lost by either Russia or Japan. Under the present financial system, China is too poor to ever hope to purchase her lost rights, and her statesmen are daily inventing new schemes on which to spend the revenues. If the revenues were honestly administered, there is no doubt that China could save herself by her own efforts. The millions in treasure left by the late Empress Dowager could be put to no better use than repurchasing the rights which her ministers and advisers so freely gave away.

—G. B. R.

AGREEMENT BETWEEN THE CHINESE GOVERNMENT AND THE RUSSO-CHINESE BANK FOR THE CONSTRUCTION AND MANAGEMENT OF THE CHINESE EASTERN RAILWAY.

Imperial sanction received by the Chinese Envoy to Russia, Hsu, dated 29th August, 1896. Agreement signed 8th September, 1896.

1.—China and Russia establish a Company, to be called the Chinese Eastern Railway Co., to construct and manage this railway. The seal to be used by the Company will be issued by the Chinese Government. The regulations of the Company will be in conformity with those of Russian Railway Companies. Shares may only be bought by Chinese and Russians. The Director of the Company will be appointed by China. His remuneration will be provided for by the Company. He may live in Peking. His duty will be to supervise the task delegated to the Company by China, and to ascertain whether its obligations are faithfully performed. All business between the Company and the Chinese Government or any Chinese officials, either in Peking or the provinces, will also be managed by the Director. The Director will also investigate from time to time the accounts of the Company with the Chinese Government. An agent must be stationed in Peking for convenience of consultation.

2.—For the purpose of surveying the course of the railway, the Chinese Director will depute an officer to act in conjunction with the Company's Engineer and the local officials along the line of route, who will arrange matters satisfactorily. Measures must be taken to pass round all houses, graves, villages, and towns on the course of the railway.

3.—Within twelve months of the issue of an Imperial Edict sanctioning this Agreement the Company must have commenced work on the railway; and within six years from the date of the completion of the survey for the line and the handing over to the Company of the necessary land the whole line must be completed. The gauge of the line must be that of the Russian Railway, *i. e.*, 5 Russian feet, equivalent to 42⅔ Chinese inches.

4.—The Chinese Government will order all local officials concerned to do their utmost to assist the Company in regard to all material required for the construction of the railway, in engaging laborers and boats, carts, men, and horses for transport purposes, and in the purchase of grain and fodder. All these must be paid for by the Company at market rates. The Chinese Government will also afford facilities for transport.

5.—The Chinese Government will take measures for the protection of the line and of the men employed thereon. The staff, Chinese and foreign, necessary for the line will be engaged as required by the Company. All crimes and lawsuits arising on the land of the Company will be dealt with by the local officials in accordance with Treaty.

6.—As regards the land required by the Company for constructing, managing, and protecting the line and adjacent land, for procuring sand, earth, stones, and lime, if the land be Government land it will be given the Company without payment. If privately owned, the Company will provide funds for payments to the proprietors at market rates, either in one payment or as yearly rent. All the Company's land will be exempted from land tax. As soon as the land comes under the management of the Company they may erect thereon any buildings and carry on all kinds of work, and they may establish a telegraph line thereon worked by the Company for the Company's use. With the exception of mines, for which special arrangements must be made, all receipts of the Company for transport of passengers and freight telegrams, etc., will be exempt from all taxation.

7.—All materials required by the Company for the construction and repair of the line will be exempt from taxation.

8.—All Russian troops, naval or military, and munitions of war, moved by the Russian Government by this railway, must be conveyed by the Company directly across the border. Apart from slight detentions *en route*, incidental to transfers, no other delays will be permitted for any cause.

9.—Any foreign passengers by this line who may proceed into the interior away from the railway must be provided with Chinese passports authorizing them to prooced. Any person unprovided with such passports must be forbidden by the Company to proceed into the interior.

10.—All goods and baggage coming from Russian territory, and again entering Russian territory by this line, will be exempt from taxation, but such goods and baggage, with the exception of personal luggage with passengers, must be carried by the Company in special vans, and sealed by the Customs officers on entering Chinese territory, and on leaving Chinese territory they must be examined by the Customs officers to ascertain that the seals are intact, in which case they will be allowed to pass. If it be found that the seals have been opened *en route* the goods will be confiscated.

As to goods conveyed by this line from Russia to China or from China to Russia, they will pay duty according to the Treaty tariff, *i. e.* an import or export duty, as the case may be, but subject to a reduction of ⅓ of the tariff rate. If such goods be conveyed to the interior they must pay transit duty in addition, *i e.* half the amount of the duty already paid. Transit duty being paid, they are not to be taxed again on passing Customs stations or likin barriers. But if transit duty be not paid they must pay duty at stations and at likin barriers. China must establish Customs stations at the two points where the line crosses the frontier.

11.—Fares for passengers, freight for goods, and charges for loading or unloading will be fixed by the Company. Chinese Government despatches and letters must be carried by the Company free of cost. Chinese troops and munitions of war will be carried at half rates.

12.—From the day of completion of the railway and the commencement of traffic, for a period of eighty years, all profit made by the line shall belong to the Company solely. Any loss must likewise be borne by it; the Chinese Government cannot be responsible. After eighty years the line and all its property are to revert to the Chinese Government without payment.

Thirty-six years after commencement of traffic China may take over the line on payment of the following and all capital and all moneys owed on account of the line and interest. As to profits made by the Company, should there be any not distributed to shareholders, these must be taken to be capital returned and deducted from the price paid for the line. China must actually pay over the amount of purchase to Russia before receiving possession of the line.

On the day the line is completed and traffic commenced the Company will pay the Chinese Government five million Treasury taels.

THE GREAT ADMINISTRATION BUILDING OF THE C. E. RAILWAY.

HARBIN: THE AFTERMATH OF RUSSIA'S ADVENTURE

(Continued from page 417.)

following the crooked Amur River in the endeavor to seek an outlet to the sea. At the same time it created a new line of attack and approach to the goal at Peking, and the ultimate absorption of Korea. In the spring of 1897 the work of construction was commenced, and in the same year the city of Harbin was founded and made the administrative and working headquarters of the new enterprise. Harbin, the railway center of construction, was the ideal location for the concentration of material and forces, and was to be, in addition, the strategic center of Russia's new empire, and but for the unexpected war with Japan her purpose would have been crowned with success. From armed guards and administrative control to permanent occupation and annexation was only a short and easy step with decrepit old China, and Harbin was to be the center of the web which would enmesh the Three Eastern Provinces. From the new base Russia was to dominate Far Eastern trade, and Harbin was to become the Moscow of Asia, the Minneapolis of the Far East, and the Chicago of the Orient, and the products of her mills would be distributed by the railways radiating from the new city, and the network of waterways connecting with the Sungari.

So the city was located on the banks of the Sungari River at a point where the railway was to cross the stream, and where the connection southwards to Dalny was afterwards to be made. Situated 350 miles west of Vladivostok, and 600 miles north of Dalny, it was in the geographical center of Manchuria. When work on the railway at the eastern and western ends was commenced, vast stores of material were shipped by river craft up the Sungari to the new town so that work could also proceed from the center.

According to the most authoritative reports, before this there was no native settlement in this vicinity, so that Harbin, as it stands to-day, is a purely Russian product laid out by the railway engineers. The original town, or old town, is located three miles from the present railway depot: Pristan, or the river town, is located on the side of the railway bordering on the river, and is the present commercial town. Then there is the official city or district in close proximity to the Railway station, where all the public buildings, offices, hotels, etc., are located. There is also a purely Chinese town about four miles from the official district, which is the headquarters of the present Taotai.

Here, in the short space of ten years, Russia has created a city which at one time promised to be the greatest manufacturing center of Asia. Here a metropolis was planned and built up with official approval and revenue, and every inducement was held out to the Russian trader and manufacturer to locate. Wide streets were laid out and paved, electric lights installed, fine large official buildings, railway clubs, hotels and schools were erected, immense car and machine shops equipped, and every bait offered the confiding Russian capitalists to purchase lots and cast their fortunes in with the new adventure. Laborers flocked from all parts of Siberia and Russia, mechanics and their families were sent out by the hundreds, on steamers from the Black Sea. Regiments of Cossacks and Railway Guards were dispatched to the new military center to police the line and work of construction, and repulse the attacks of the Hunghutzes. In their wake came the demi-monde, music hall artistes, and the horde of adventurers who follow an army and flock to new pastures. The town rapidly outgrew its original delimitations, and further land was added to meet the expansion. The rich Siberian Jews, attracted by the opportunities for quick and handsome profits, lost no time in establishing themselves in the new city. Land increased rapidly in value, houses were at a premium, and excessive rents and cost of living came as a natural sequence.

The old town was the first to be thrown open by the Railway Company for the purchase of land by private parties, at a rate of a little over one cent gold per square foot, but the price was soon raised to three cents per foot and over; the official town was then laid out and immense building plans entered into, while in the river town the prices soared to over 17 cents gold per square foot, and many large and substantial brick buildings were erected. Within a year from the time this section asw opened to the public, it is estimated that over $5,000,000 gold was expended in building operations by the public. Additions were laid out adjoining the administrative town, and the land was immediately taken up by speculators and resold at prices as high as $5.00 gold per square foot. Nearly 3,000,000 roubles were received by the Railway Company from the sales of lands to private parties in a couple of years, all secured on an eighty-six years' lease.

Naturally capital was poured into the new city by the Jews, and many Chinese also furnished considerable money to finance new undertakings and erect buildings. With the rapid progress of construction calling for an army of skilled and unskilled labor, coupled with the demand for railway work, and the constant increase in the military and official element, the boom progressed and prospered. Theaters, music halls, and brothels abounded. Above all else the easy-going Russian loves his pleasure, and this side of his nature was amply catered to in the heyday of Harbin's career.

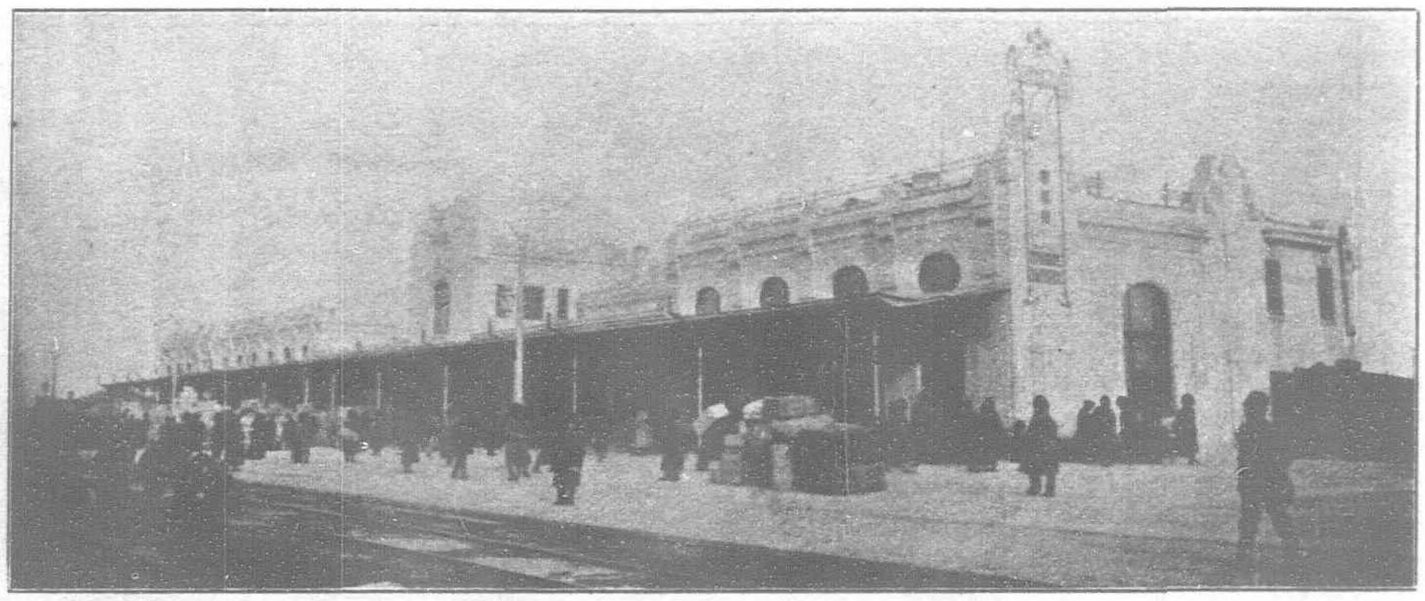
Then followed the industrial boom. With a country rich in wheat and cereals, minerals and timber, flour mills, mines and saw mills were projected and erected. Breweries followed, vodka factories for the soldiers, meat packing plants and other large schemes were promoted. Prosperity was in the air. Everybody seemed to have money, and it was spent like water. Easy come, easy go. The Government was rich, and St. Petersburg was far away, and the high officials were too preoccupied with getting their share of the official "squeeze" to pay heed to the petty "graft" of the lesser employees, and the saturnalia whirled on with no thought of the morrow, or of the day of reckoning. It was a good thing, and it had to be carefully nursed and preserved. Russia for the Russians, and Manchuria for the elect, and out with the foreigners.

Harbin was Russian to the core. Treaty stipulations and other foreign rights were not known, or were they known, were as contemptuously ignored. It was as distinctly a Russian city as though located on the Volga. The same obnoxious laws were implanted and enforced. Foreigners were practically excluded or only permitted to remain on sufferance. Passports were necessary to visit or remain in the city, and the same irritating domiciliary police regulations enforced in Russia were placed in operation. None but Russians or

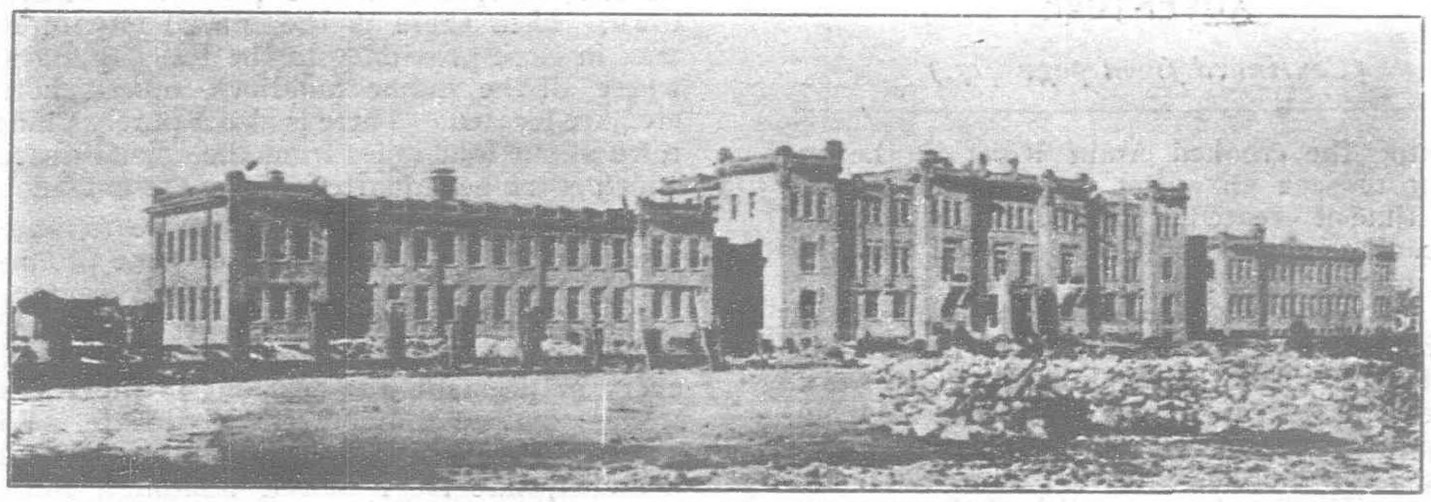
HARBIN: THE MAIN STREET LEADING TO THE RAILWAY STATION. THE OFFICIAL HOTEL AND RUSSIAN CONSULATE GENERAL TO THE RIGHT.

Chinese could hold land, construct buildings or engage in any permanent business. The foreigner could, however, by waiving all his rights, be allowed to establish himself in certain lines of trade. The beneficent Railway Government would go so far as to grant him certain privileges, provided he signed a document binding himself to faithfully observe all the obnoxious Russian regulations, and failing in which, at any time, his property could be forfeited, and all his buildings demolished at the will of the Railway Manager. And, furthermore, the fortunate foreigner who so far forgot his self-respect to submit to the foregoing, was further requested to sign another document exempting the Railway management from any claim for damages arising from such a situation, and the Consul of the nation to which he belonged was expected to countersign such a surrender of rights before he could start business. No white man could tolerate such impositions on his rights, and no consul would for a moment dare to witness or indorse such a document, which recognized absolute Russian jurisdiction. Is it any wonder that Russia had the field all to herself, and no foreigner attempted to establish himself in business in the new Moscow. Not only were the extra territoriality rights of foreigners in other parts of China studiously ignored, but the Chinese themselves were denied the jurisdiction of their own officials. "Exclusive and absolute administration of the railway lands" was interpreted in the sense that China had abandoned all rights and jurisdiction in her own country, and foreigners were to conform to the laws of Russia, in the heart of Manchuria. All the land suitable for foreign settlement for miles around was appropriated and included in the railway zone to prevent foreign interests from gaining a foothold in the district. During the Boxer troubles, a further extension of the Railway zone was effected. In 1901 the population had grown to 12,000 Russians, and increased to 60,000 by the autumn of 1903, exclusive of soldiers. The Railway employees alone numbered over 11,000. The Chinese population was about 40,000 living in a separate town. The state of affairs in Harbin at this time can be better appreciated by the fact that out of a total of 400 Japanese inhabitants about 350 were women, while of the entire Russian population of 60,000 over 40 per cent. or 24,000 were females.

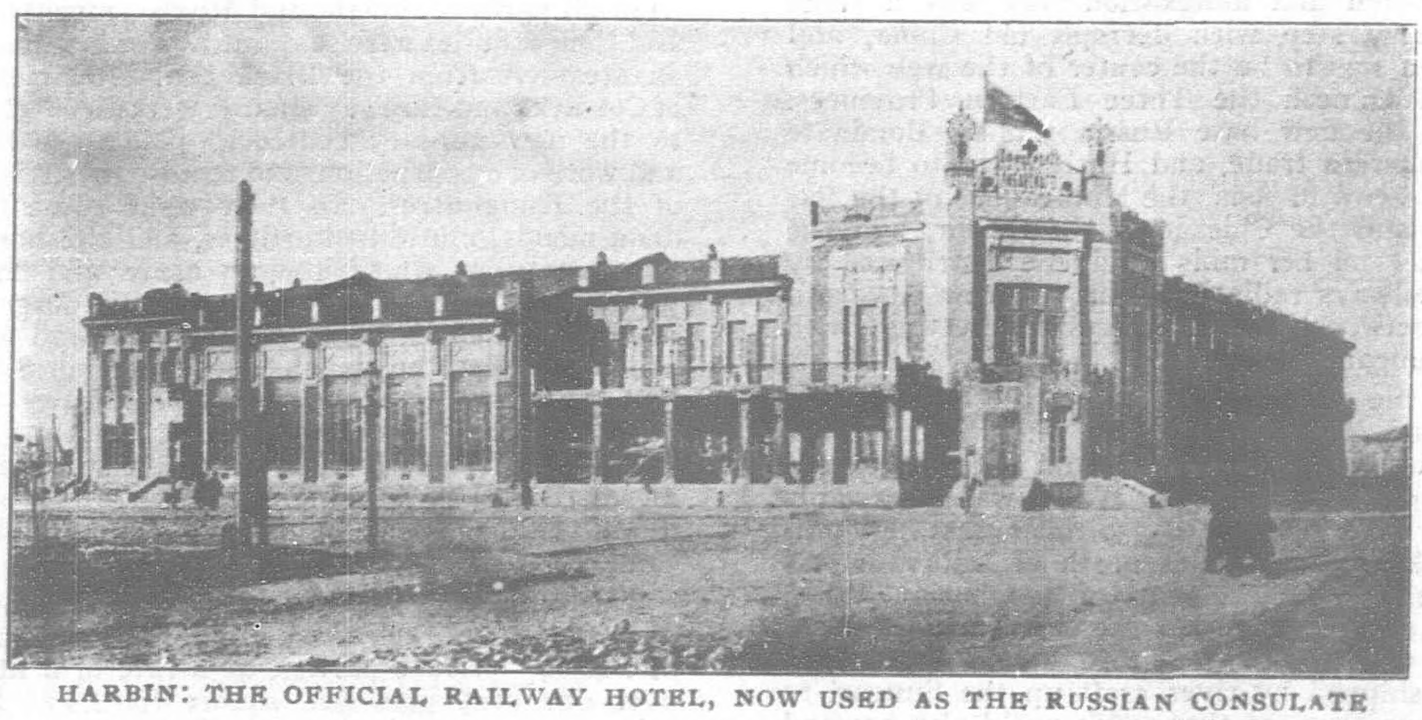
Then came the war. The immense armies of the Czar, transported across Siberia, came to a halt at Harbin and were here encamped and forwarded on to the front as their time came. Here was the real military headquarters, here was the base, in which the commissariat, and quartermaster's stores were stacked up for reshipment further south. For the Russian the war began when he left Harbin for the front and ended when he returned. Here the officers left their families, some wives, some mistresses, and here the camp follower halted and went no further, here the gamblers and sharpers plucked the easy going and good natured soldier, and the commercial adventurer divided the loot with the mercenary official. To Harbin swarmed the women, who made it their abode, bringing with them the luxuries of Paris and the life and atmosphere of the boulevards. Theaters multiplied, cafés chantants were in full blast, drinking saloons and pleasure resorts abounded. No less than 26 music halls catered to the pleasures of the soldiers, running day and night



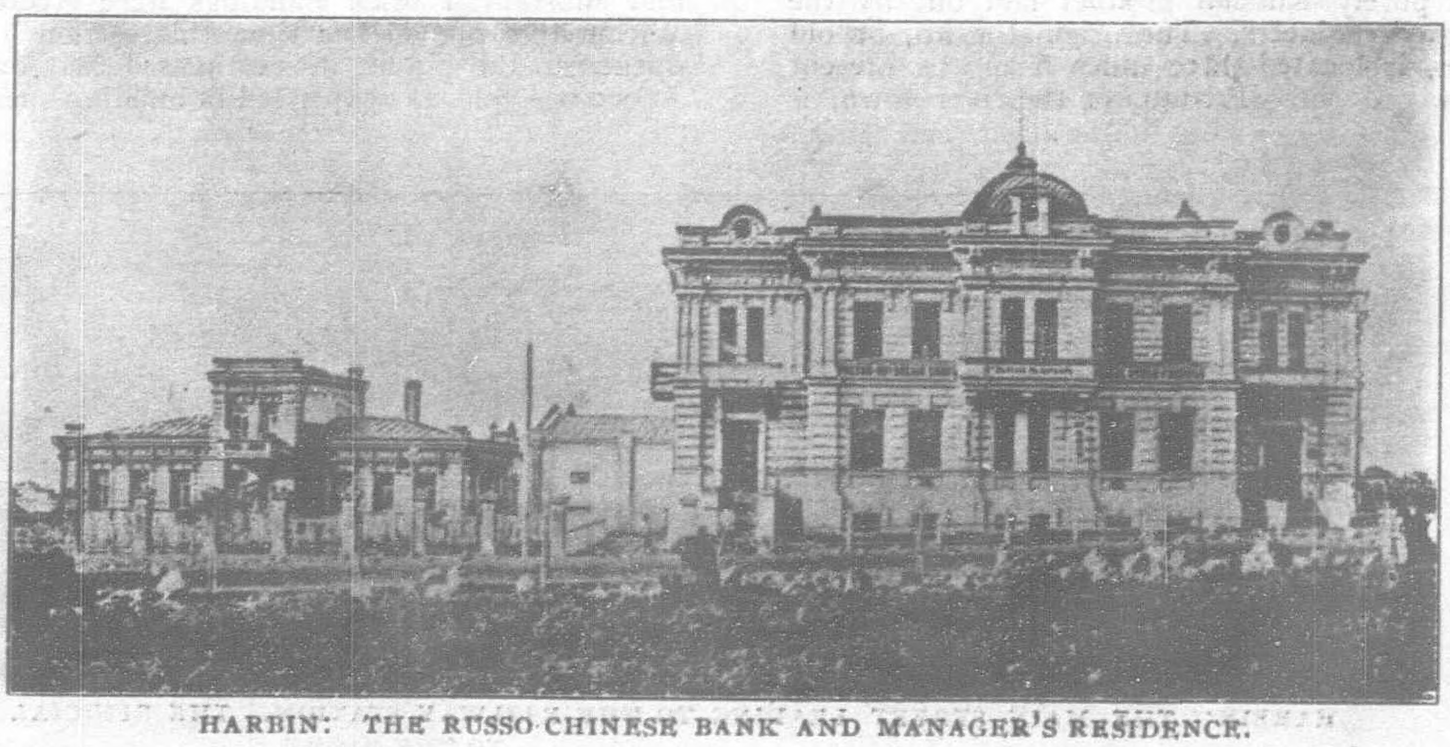
HARBIN: THE RAILWAY STATION.



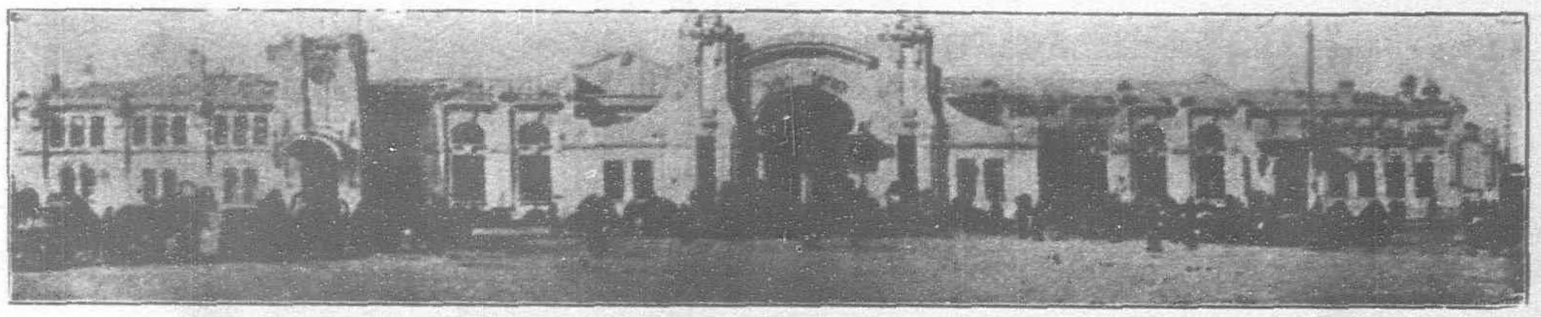
HARBIN: THE ADMINISTRATION BUILDING.



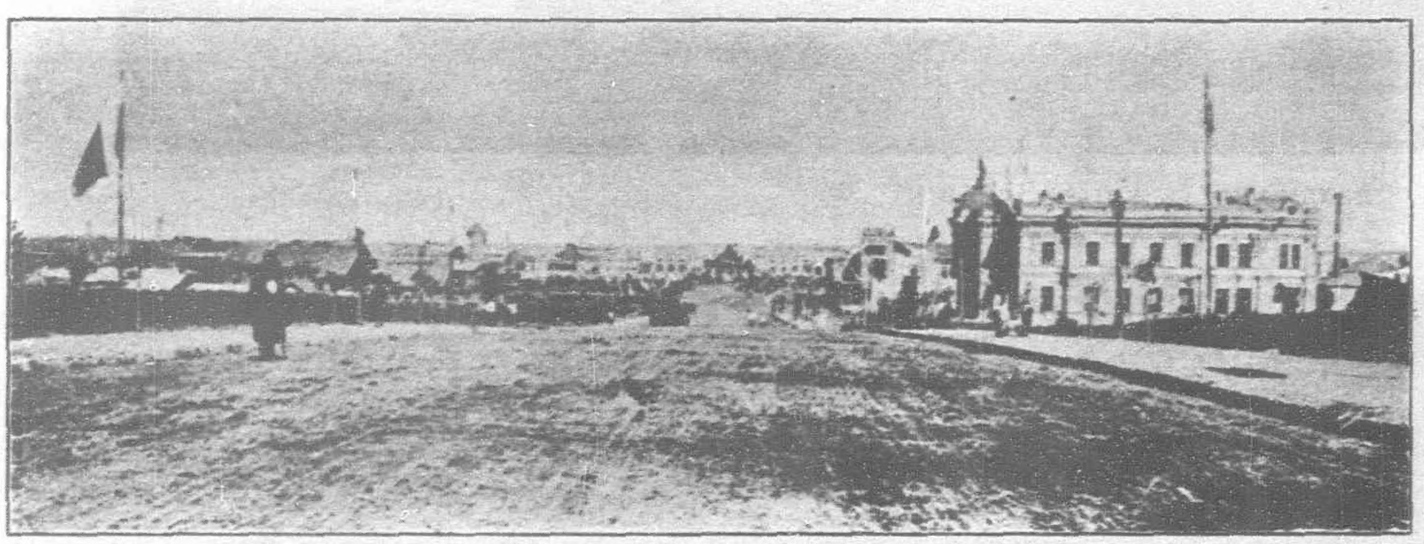
HARBIN: THE OFFICIAL RAILWAY HOTEL, NOW USED AS THE RUSSIAN CONSULATE GENERAL.



HARBIN: THE RUSSO CHINESE BANK AND MANAGER'S RESIDENCE.

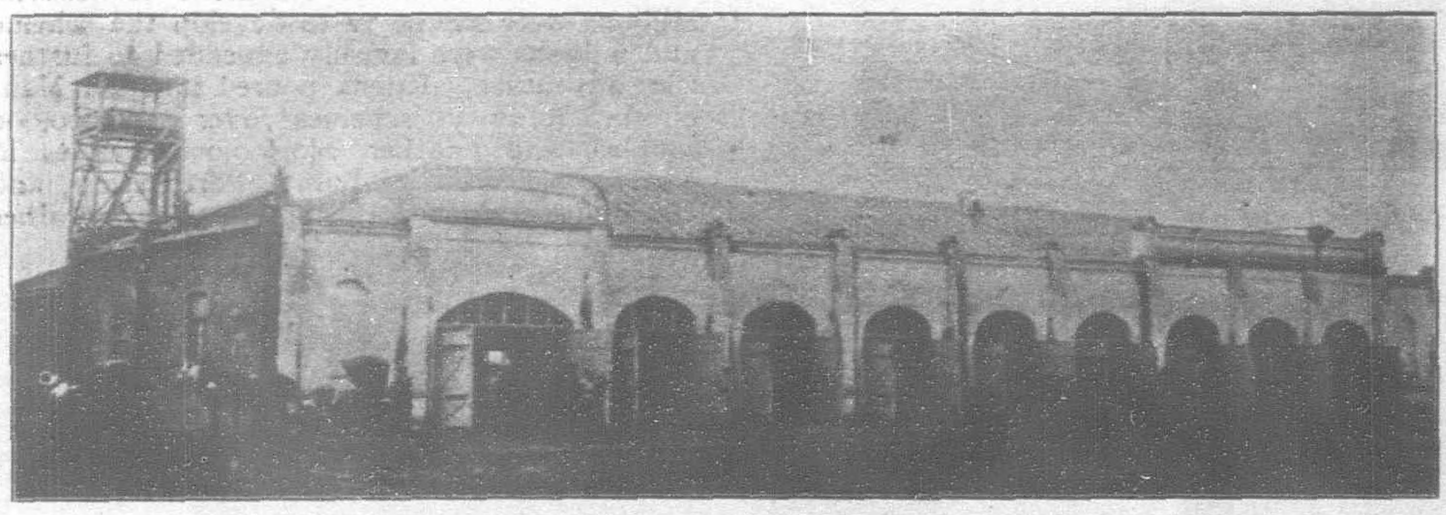


HARBIN: FRONT VIEW OF RAILWAY DEPOT

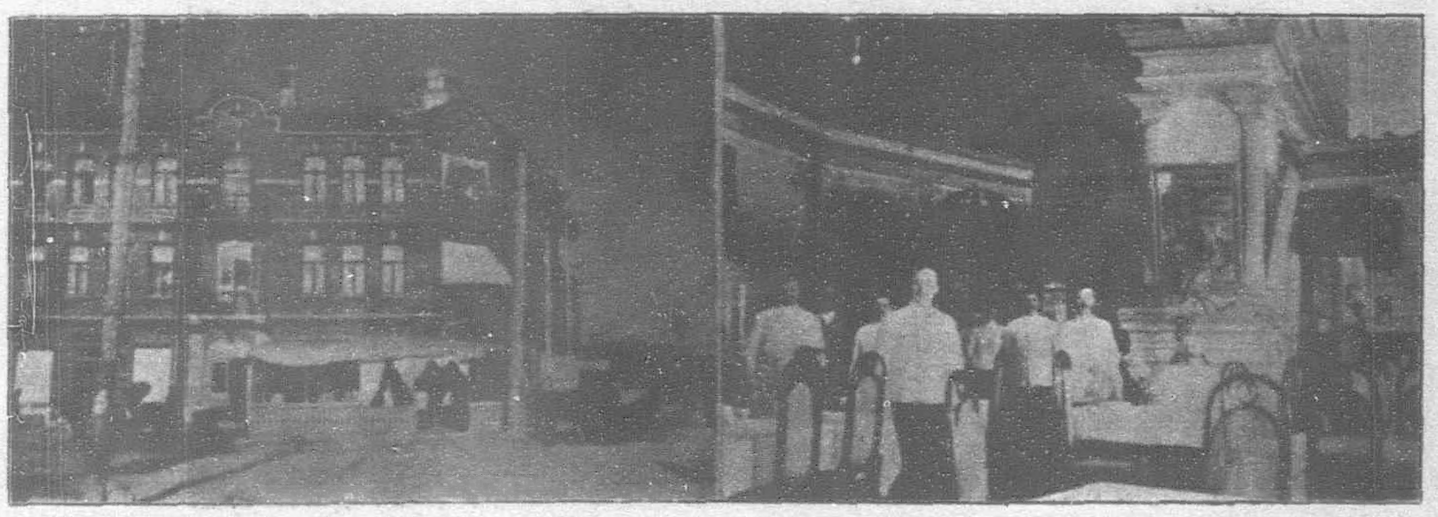


HARBIN: STREET TO RAILWAY STATION. THE RUSSO-CHINESE BANK TO THE RIGHT

HARBIN: COMMERCIAL STREET, PRISTAN



HARBIN: FIRE DEPARTMENT



HARBIN: THE GRAND HOTEL DU COMMERCE

without pause. The pace was swift, life was short, and extravagance and recklessness the order of the day. Champagne flowed like water. Magnums took the place of the ordinary pint or quart bottles. They cost more and the money would go quicker. Officers ordered to the front squandered their savings or year's pay in one last wild orgy, drinking the cup of pleasure to the last drop, and those lucky enough to return started in to make up for the lost time and hardships at the front.

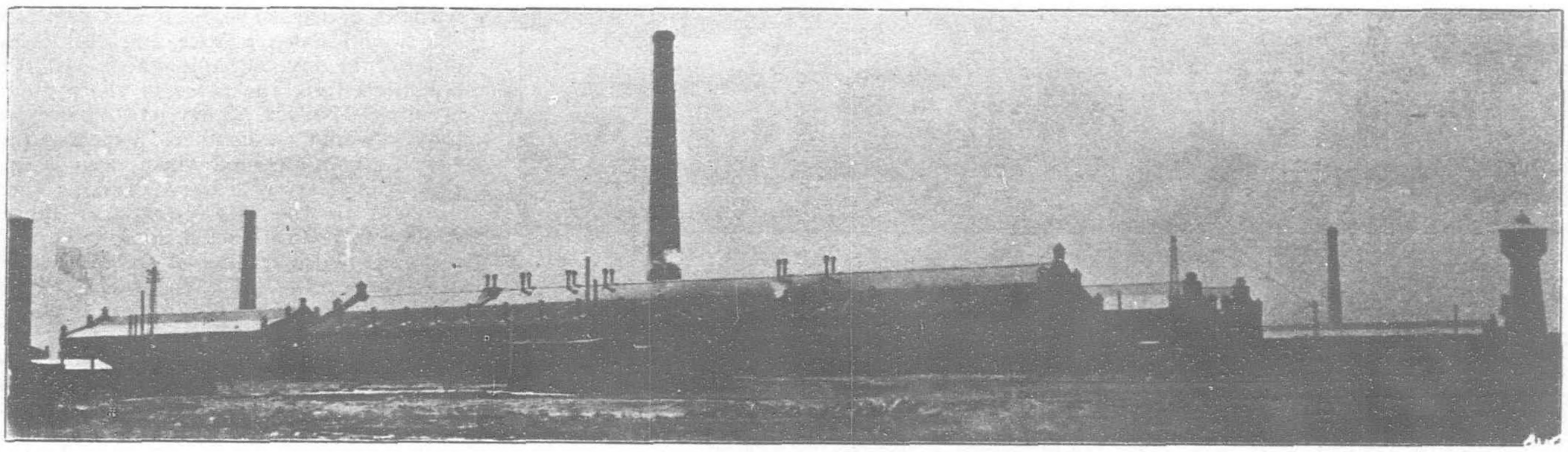
A rough, lawless element entered with the army, and made life unsafe despite the presence of the disciplined soldiers.

Houses were at a premium, lands rose still higher in value, and fortunes were made in real estate and building transactions. Chinese and Jewish money lenders flourished, jewelry dealers were reaping a glorious harvest, and fashionable drygoods stores carrying the latest and most expensive stocks of feminine wear did a thriving trade.

In the midst of the whirl, the industrial boom war born. Flour was expensive. The railway from Russia was choked with troops and urgent war material and the Japanese cruisers made it difficult to procure supplies from the sea, so with a country rich in wheat, flouring mills offered a solution, and the money for their erection was readily forthcoming. As long as the army remained the market was assured and large profits possible. It is calculated that 85 per cent of the fodder and provisions supplied were of local production. No thought seemed to be given to a return to normal conditions nor it appears was any attempt made to secure a market for the by products. The investment was made on the demand created by the army, and shareholders seemed to labor under the impression that the abnormal conditions would obtain indefinitely. Breweries, four of them were hastily erected; vodka distilleries, eight were placed in operation; meat packing establishments, brick making plants, saw-mills, a glass factory and other industries were rapidly financed and carried through. Profits were enormous, and expenses were saddled on the enterprises in accordance. High salaried Director Generals, Directors, Managers, Superintendents, and a host of sinecures were created and fastened on the companies before the real practical head of the concerned was reached. It is stated the administrative cost of the milling companies averaged 37 per cent of the total. Everything was lovely, and as long as the boom lasted, no one cared to look ahead for the hard times coming.

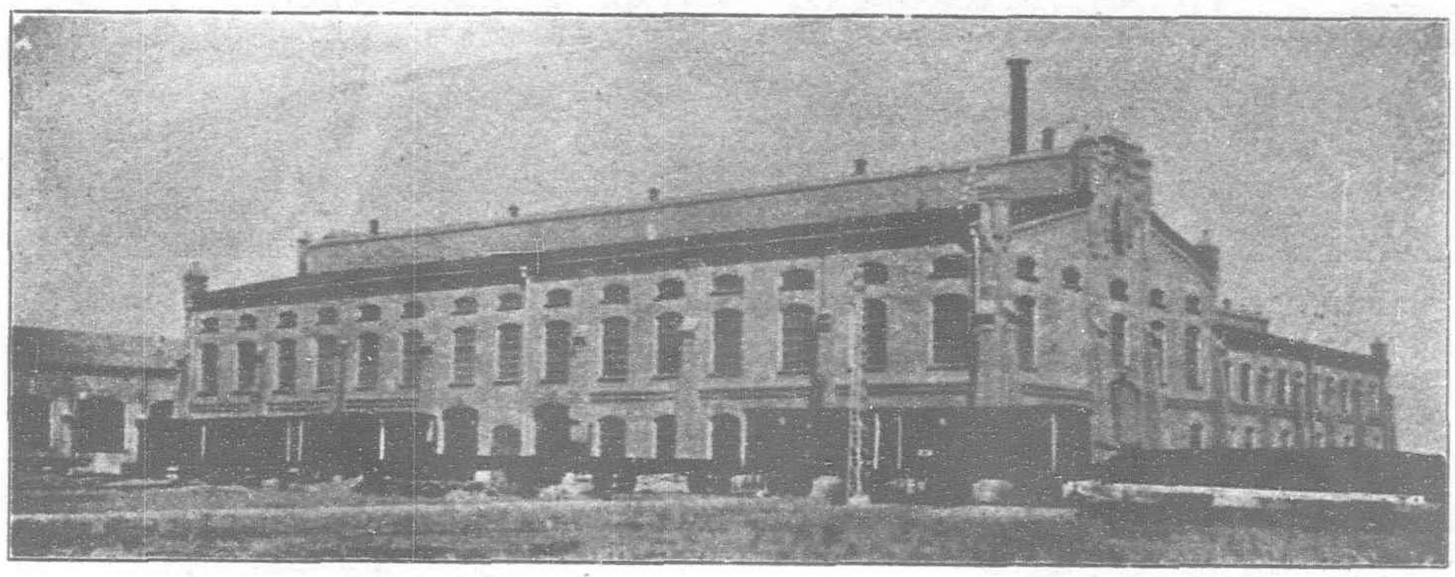
The fever of making the city a great manufacturing center, a Moscow in Asia, possessed the railway management, and every system of promotion and protection that could be devised to increase its growth along these lines was energetically encouraged. The administrative city was planned on a grand scale and some of the finest buildings in the East erected. Over 30,000,000 roubles went into official edifices. The great Administration headquarters, housing all the offices of the Railway, three stories in height, with a floor space of over 4 acres, was built at a cost of over 1,500,000 roubles. The railway shops were designed on a liberal scale, and equipped at a cost of over 2,500,000 roubles, hospitals costing 700,000 roubles, railway club house, 375,000 roubles, railway or official hotel, 165,000 roubles, and nearly a million in schools. Commercial High Schools, a Technical School, and several minor schools were constructed, and last but not least the handsome stone edifice of the Bank, the father of the entire scheme. In addition, the long rows of brick dwellings, barracks, officers' houses, the fine residence of the Commanding General, the Headquarters staff of the Amur, the unique architectural freak of a railway station, hotels, churches, synagogues, private houses, the solid looking and attractive department stores, and the tall chimneys of the mills, electric light plant and the car shops, gave the town a truly up to date business-like appearance.

In addition to the great traffic of the railway, the Sungari River was at this time a busy artery of trade. From Harbin to the Amur River good sized river steamers carried on an immense traffic. Steamers loaded with large

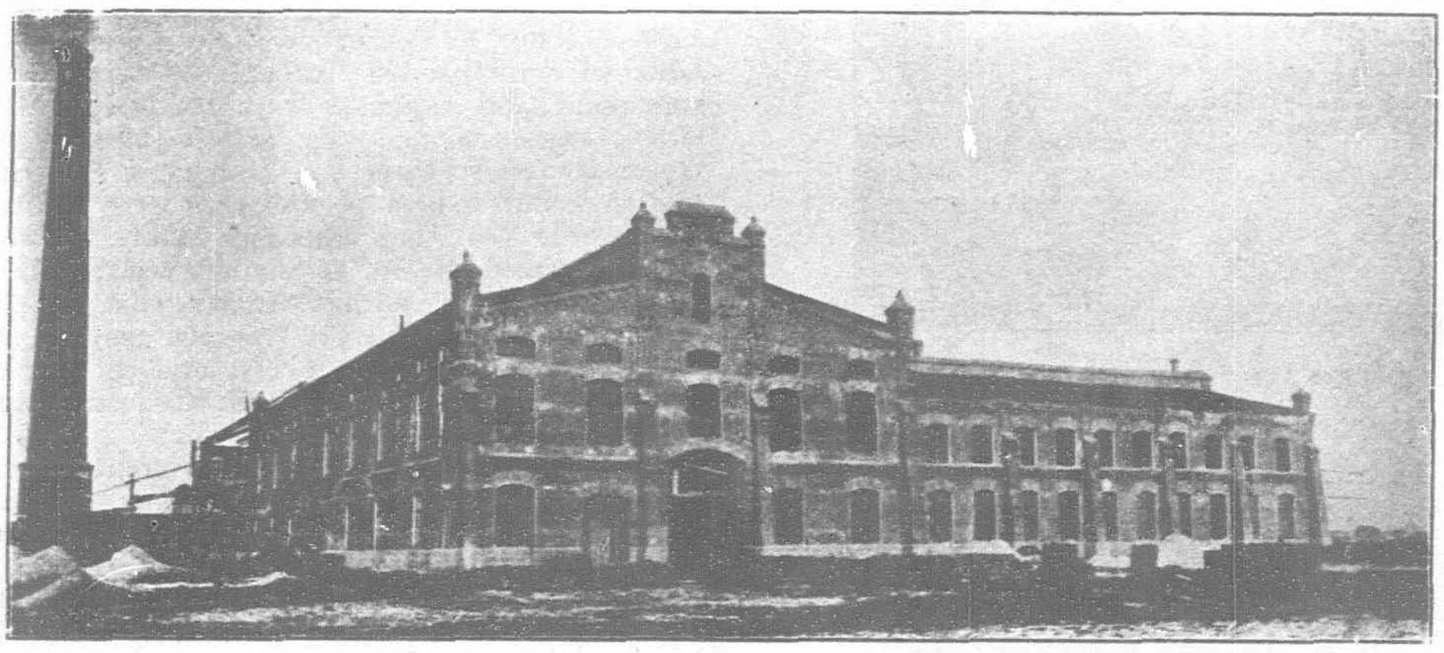


RAILWAY CAR SHOPS, HARBIN

cargoes, and towing a line of laden barges, dumped their freight out on the banks of the Sungari at Harbin and contributed to the general prosperity. Lumber from the Amur, and miscellaneous stores from Vladivostok and the river ports were strewn along the banks, so that the appearance was similar to the beach at Nome during the gold rush. From Harbin to Harborovfsk at the mouth of the Ussuri River on the Amur, the trip by steamer occupied 5 days, and here connections were made with the Ussuri Railway for Vladivostok. The Chinese Eastern Railway Company and the Amur Steamship Company kept a large fleet of the light draft, wood burning, stern wheel river steamers at work carrying freight and passengers between the two points, the former at an average charge of $4.00 gold per ton.



CHINESE EASTERN RAILWAY, MACHINE SHOPS, HARBIN



RAILWAY SHOPS AT HARBIN

The volume of traffic of the combined railway and steamships was immense, and it was almost impossible to handle the freight and properly store it. Vast piles of freight were dumped at convenient points. The streets of the town were choked with carriages, automobiles appeared, and an electric tramway company was organized to connect the different sections of the sprawling metropolis, and on all sides blocking traffic was the ever present clumsy Manchurian cart, with its five to ten draft animals.

And behind all this whirligig of pleasure, vice, war, and industry stood the Russo-Chinese Bank, the magician that had waved the wand and brought it all about. Housed in its fine structure of stone, having its own heating plant and electric lights, erected at a cost of over 200,000 roubles, the Bank was the center, the hub around which Harbin revolved. Making no loans on realty, the management confined its efforts to advancing capital for current substantial business, and extending credits to Chinese merchants purchasing stocks of Russian goods, in addition to the regular exchange business. The results were profitable. Exclusive of purely government and railway business, the daily transactions exceeded 500,000 roubles just prior to the war, and this must have been increased owing to the swollen volume of trade. Cotton goods, sugar and other Russian products were thus introduced into the Manchurian markets. Imported free of duty through Vladivostok, favored with special rates on the railway and long credits by the Bank, Russian goods threatened for a while to secure a firm foothold. Encouragement of all kinds was given to the Chinese and Russian merchants, but to no outsiders. Harbin was to be the entrepot for Russian trade in the East, and the Open Door was only a dream of foreign diplomats that did not embrace Northern Manchuria. Millions were necessary to develop the scheme and millions were lavishly expended to further the adventure. Russia poured into her Manchuria Railway schemes over 300,000,000 roubles, and another 250,000,000 roubles in erecting the cities of Dalny, Port Arthur, and Harbin together with the fortifications and other

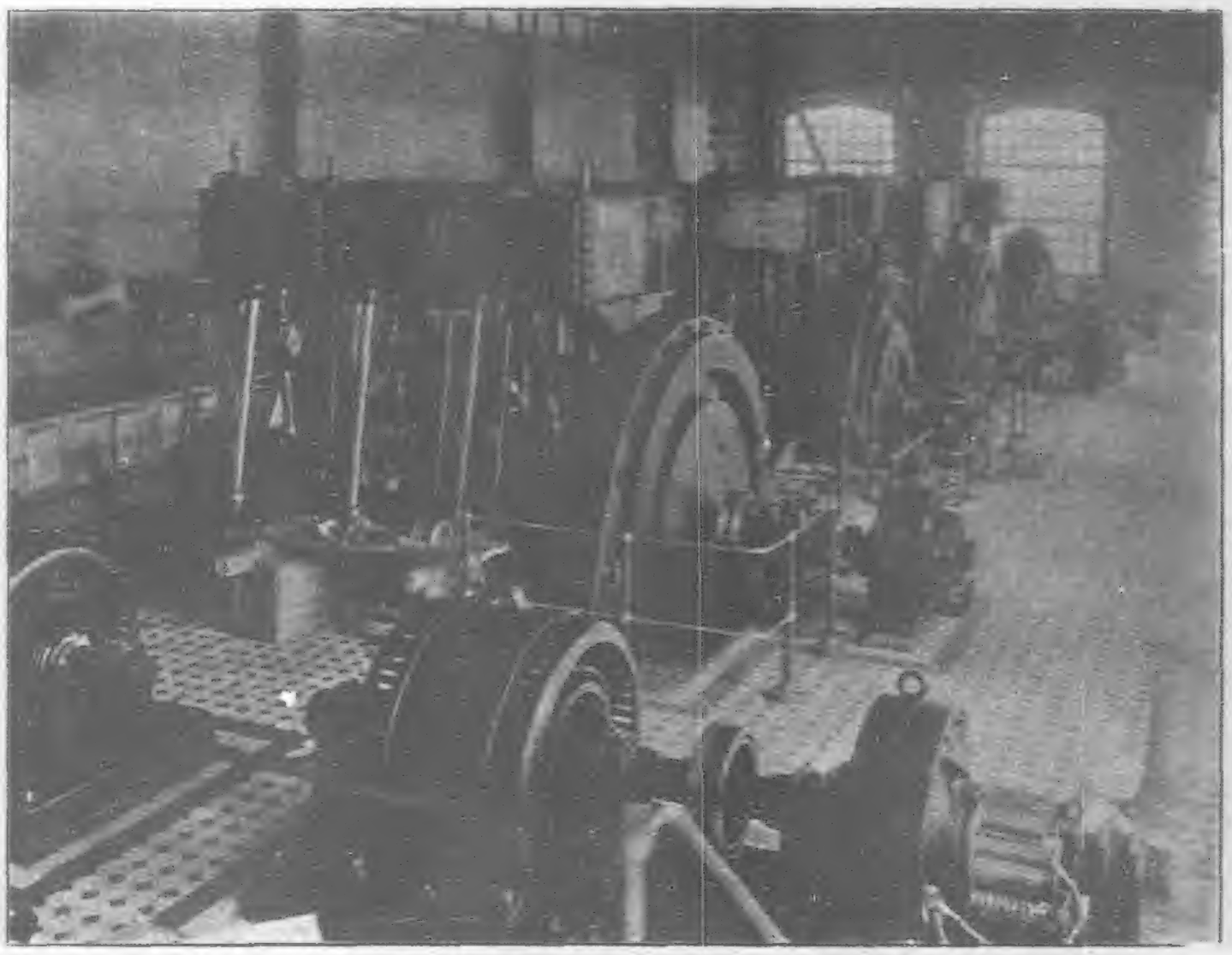
MACHINE SHOPS OF THE C. E. RY. AT HARBIN

ELECTRIC LIGHT AND POWER STATION, HARBIN

permanent improvements. How much of this vast sum was actually expended no one will ever know. When the time came after the war for auditing the accounts, a convenient fire destroyed the building containing all the records, so the rendered figures had to suffice without comment.

The Treaty of Portsmouth came as a surprise to Harbin. Another few months and the tables would have been turned and the dreams of Empire realized. For Harbin merchants it was difficult to realize that the end had come, and as the aftermath set in and the soldiers returned to their homes and business began to decline, they still cherished hopes of a bright commercial future. The evacuation proceeded slowly. The limited facilities of the railway prevented a rapid homeward movement, so for a long while after the termination of hostilities, Harbin was still an armed camp. The enormous volume of business continued, and war prices prevailed. The large bodies of troops, freighted to Russia, seemed to make little impression on the merchants of Harbin. Thousands still remained, and the merchants refused to believe that the Government was earnest in the evacuation, and failed to realize the significance of the steady decrease. Stocks were increased, and the market overloaded. Sales, however, continued to diminish, as the soldiers gradually departed on their long journey, until only 50,000 remained of the vast army. The adventurers and harpies decamped taking with them the choice pickings of the harvest, leaving the hulks for the established merchant. It gradually dawned on even the most sanguine that conditions had changed, but they were unable to quit, as their capital was tied up in large stocks of merchandise and they had to hold on to recoup. No systematic or determined effort had been made by the Russian merchants to secure the native trade, despite the efforts of the Banks and the authorities to encourage and assist this movement. It was much easier and more profitable to cater to the good-natured, pleasure-loving, spendthrift soldier, than to get out and build up a trade with the economical and impoverished native. The Bank and the Railway whose future prospects and success depended on solid native trade, catered to this element, but with only nominal success. Russian kerosene, oils, matches, sugar, cotton goods, and cheap novelties were the only items of any importance dealt in. The purchasing power of the native was small, and Northern Manchuria is sparsely settled, and the market even for these necessities was limited. So with the eventual withdrawal of the Russian army, and the departure of the swarms of adventurers, camp followers and women, the merchants were face to face with the worst that could befall them—a return to normal times, and no market. The best customers for the flour mills, the breweries, and vodka factories were gone. The natives prefer their own crudely ground coarse flour, they don't drink beer or vodka, so the main industries of the city found no market for their output. The theaters, bereft of their patrons, closed; the music halls followed, and with the departure of the extravagant female spenders, the jewellers and department stores lost their best paying trade. Houses that were at a premium shortly before were vacated, new tenants came not, and a decline in real estate value followed. The costly block of stores, constructed in the center of the town for the largest Moscow merchants remained unoccupied. The brick factories and saw mills closed for lack of business. No one wanted to build. The glass factory suspended operation. The flour mills were forced to close down. One brewery remained at work. The hotels were emptied of their patrons. The large official hotel was converted into the offices of the Russian Consulate General. And so Harbin at last came to a realization of the exact state of affairs.

The town to-day presents an appearance of premature decay. Grass grows in the streets, no smoke issues from the tall chimneys of the mills. The large and costly stocked department stores open for the day and only a casual customer appears. Theaters have closed. Only one or two cafés chantants invite the midnight pleasure seeker, in place of the previous twenty-six. The houses are out of repair and the plaster ornamentation of many of the large buildings has fallen away disclosing the naked lath, revealing the fact that the buildings in part were only imitation stone. The town is existing on the expenditures of the railway. The salaries of the employees maintain the few stores, and the awarding of a contract for supplies is eagerly anticipated by the merchants. The railways and the Bank are making strenuous

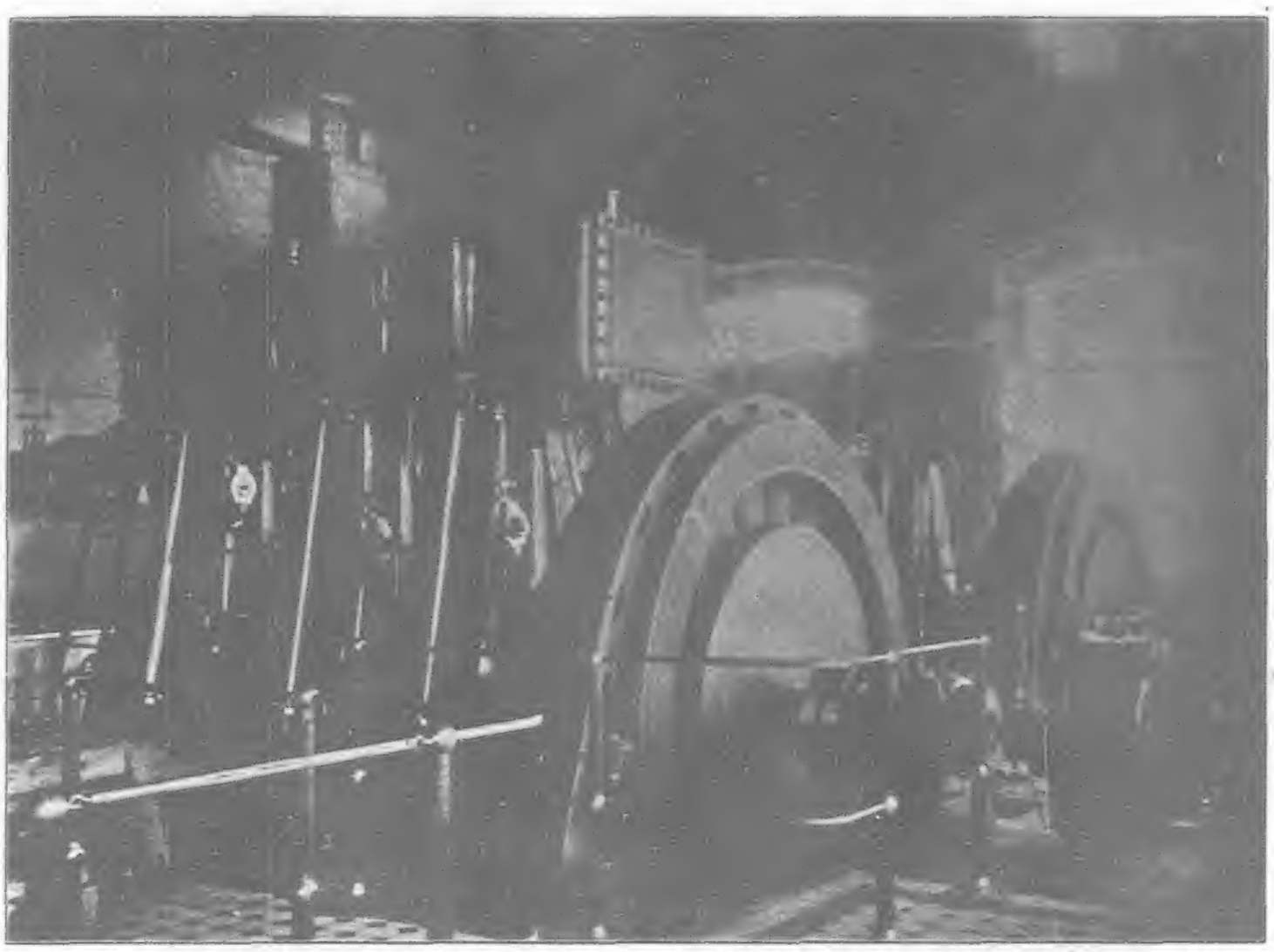


ELECTRIC LIGHT AND POWER STATION, HARBIN. GENERATING ROOM

efforts to renew a spirit of confidence and promote trade with the natives, but there is a lack of co-operation on the part of the Russian merchants. But powerful as they are, the Railway and the Bank cannot carry the load indefinitely. There must be an end. The last financial year of the Bank was closed without the payment of the customary dividend. The Railway is losing at the rate of 5,000,000 roubles per annum. The budget for 1908 was based on an estimated income of Rbs. 15,857,793; expenses (including Rbs. 625,388 interest on bonds) were Rbs. 19,265,110 or an estimated deficit of Rbs. 3,407,317. The actual deficit is, however, claimed to be in the neighborhood of Rbs. 5,000,000.

Yet there is apparently no sign of retrenchment. The Railway administration building swarms with employees, and extravagance is still the order of the day. War prices continue, or at least charges are higher in Harbin than in any other port of the Orient. Hotel charges, droshky hire, rents, and the general cost of living is at least double the cost in Shanghai.

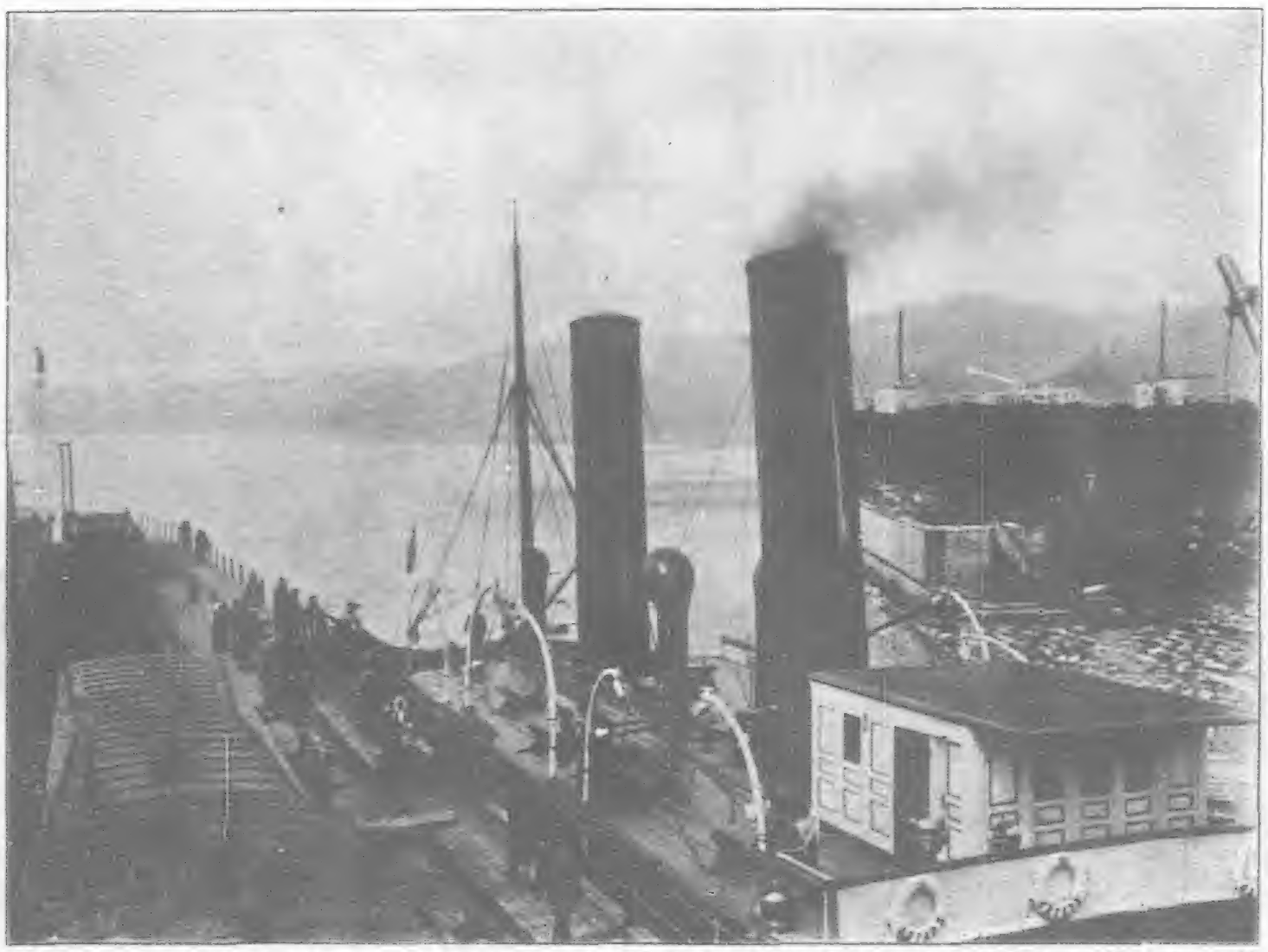
And to complicate the general industrial depression, the political situation has been steadily increasing in intensity, and has now reached



HARBIN: ONE OF THE GENERATING SETS IN THE ELECTRIC LIGHT AND POWER PLANT

HARBIN: CHOORIN AND COMPANY'S DEPARTMENT STORE IN PRISTAN

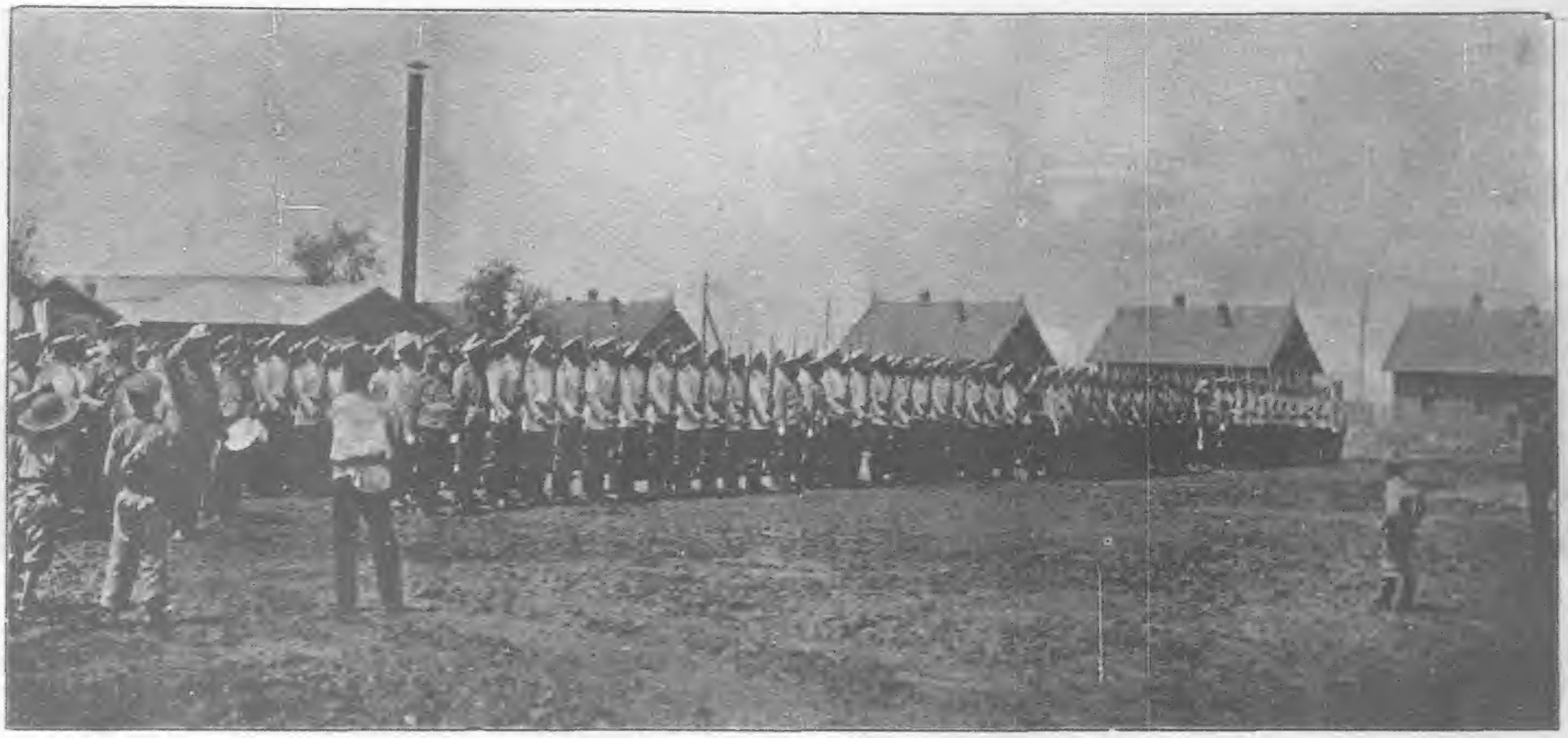
HARBIN: THE LARGE DEPARTMENT STORE OF CHOORIN AND COMPANY IN THE OFFICIAL CITY



TRANS-SIBERIAN RAILWAY: THE ICE BREAKER AND RAILWAY FERRY STEAMER "BAIKAL," AND FLOATING DOCK

an acute stage. As already noted, Russia has interpreted the terms of the railway concession as giving the Railway company exclusive and absolute administration of the Railway lands or zones. This is according to the French text of the agreement. The Chinese claim that this stipulation was not in the original Chinese version of the document, and that during the occupation of Peking, their original was stolen from the records, and the Russians have since been acting on their own reading of the terms. Nevertheless the Russians have acted on this interpretation of the agreement, since they began their work of construction, and Harbin has been to all intents and purposes a part of Russia, and ruled under Russian laws.

As a result of the war, Harbin was opened to the world as a treaty port of China, which gave to foreigners the right of residence and engaging in trade under the existing extraterritoriality laws prevailing throughout the Empire. A Chinese taotai was ordered to the new port, and a Consul-General sent out from Russia to take over the representation of her national interests. Right here a fierce internal dispute arose amongst the Russian officials. The head of the Railway, Major Gen. Hovarth, insisted that he was the supreme authority, while Luba,



HARBIN: THE RAILWAY GUARDS AT INSPECTION

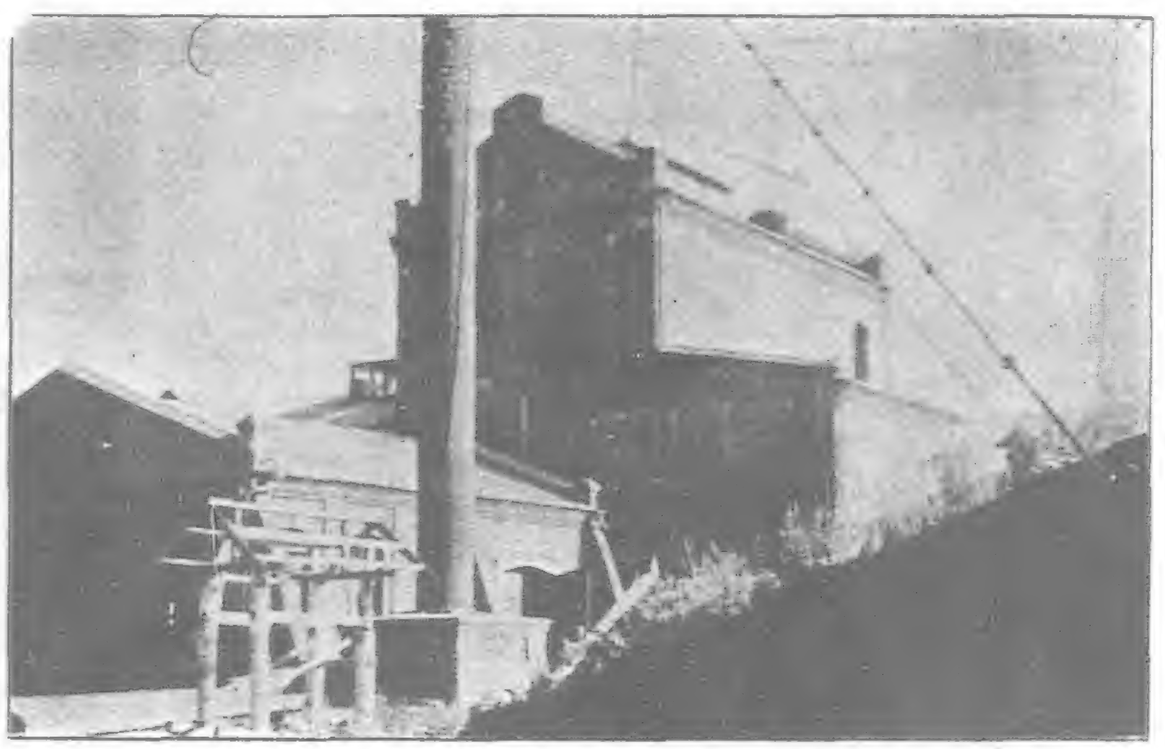
the new Consul-General, took the stand that as he was sent out to Harbin in that capacity, he would carry out his instructions, and defying the railway he stated that all judicial and other matters affecting Russian citizens would be decided by him. In other words, Luba, the representative of the Russian Government, refused to recognize the right of the Railway as a commercial company, to enforce its will and regulations and assume the functions of a governing power. The situation created was an impossible one for the railway, and the wires were pulled to have Luba removed. On a trumped charge of receiving bribes he was called to St. Petersburg to explain, and shortly afterwards Major General Hovarth was appointed acting Consul General in his stead, in addition to his position of chief of the Railway staff.

The United States and Japan sent Consular officials to the new port, and France appointed a consular agent. Great Britain and Germany refrained from creating a new consulate for the port, leaving their nearest representative to make occasional visits. The Russians again asserted their contention that Article 6 of the Standard text of the railway agreement gave them the exclusive and absolute right of administration in the Railway territories. The argument was brought forward, that Harbin was purely railway territory, that previous to the war the Town as such did not exist, and the ground covered by the present city was planned, laid out, and erected by the railway, or Russian or Chinese individuals who purchased land from the railway. The Harbin opened to the world as a Chinese treaty port must therefore refer to the Chinese town four miles away under the jurisdiction of China, and administered by the Taotai. The Russian Minister at Peking sent identical notes to his colleagues, to the above effect, requesting them to communicate the contents to their Consular representatives in Harbin and Manchuria. Japan alone of all nations, through its Minister at Peking, Baron Hayashi, supported the stand of Russia and instructed Consul General Kawakami at Harbin, that the right of administration in the railway zones belonged to the Railway Co., and to notify the Chinese authorities to that effect. Baron Hayashi, at the same time, secured from his Russian colleague a definite assurance that Russia would reciprocally recognize similar rights in the Japanese zones of the South Manchuria Railway, which operates under the same convention as the Chinese Eastern Railway.

This further complicated the situation at Harbin. Many Japanese had established themselves in business in Fu-tu-tien, the Chinese city. The Chinese Taotai attempted first to expel them, as the territory was not a treaty port, but the Japanese refused to budge. Then he attempted to levy the customary Chinese lekin tax on their business. The Japanese refused to pay, and were supported by their consul. A British firm then established itself in the native city to be nearer its customers, and the taotai attempted to levy the tax on their merchandise. This firm, seeing that their Japanese competitors paid nothing, took the same stand. The Railway said to the foreigner, you can't do business in Harbin, unless you recognize Russian authority and laws, and pay our taxes. If you want extraterritoriality get over to the native city, this is not a treaty port. The Chinese said to the foreigner, get out of

HARBIN: RAILWAY GUARDS AT SERVICE FORMATION

HARBIN: THE JEWISH SYNAGOGUE



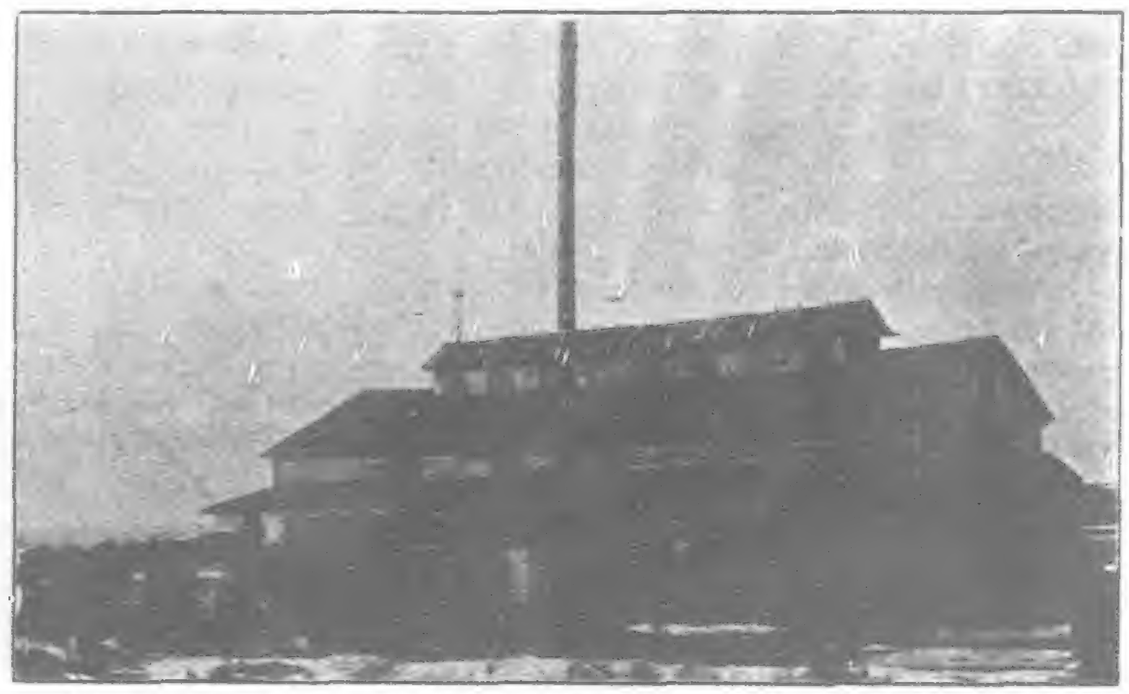
HARBIN: ONE OF THE BREWERIES

here and go over to Harbin, there is the treaty port. If you remain here you will have to pay our taxes and conform to our trade regulation. If the foreigner paid the Chinese tax, he recognized Fu-tu-tien as native territory, and the taotai made strenuous efforts to have the foreign firm mentioned submit to the tax as a precedent.

port, and, in accordance with treaties, refuses to allow her merchants to pay the lekin tax on goods. If this point is conceded, she can apply the same rule to the large cities along the South Manchuria Railway, when a repetition of diplomatic squabbles will follow. The Railway Company's pretensions to regulate the affairs

America and Great Britain has been made as a matter of principle and fair play. The Railway Company, however, despite this firm diplomatic stand, has steadily persisted in its attitude, and last year planned to create a municipality which would be presided over by the Chief of the Railway Staff. The opposition to this on

HARBIN: ONE OF THE BREWERIES



GLASS WORKS NEAR HARBIN

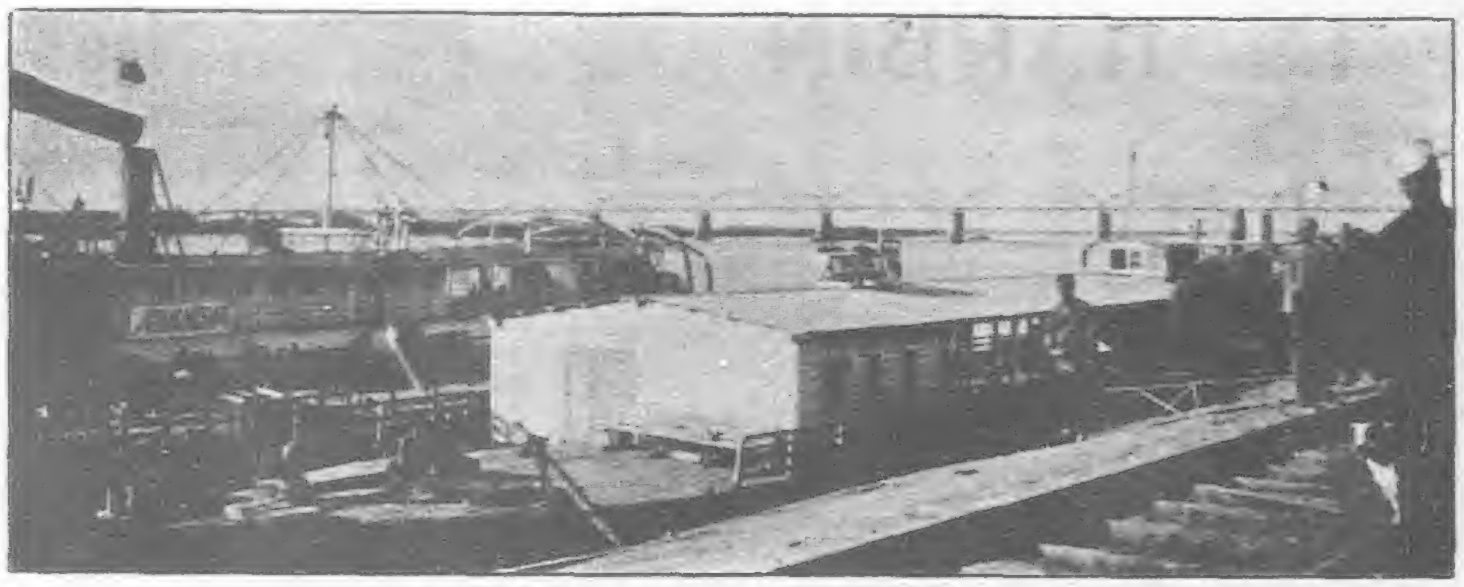
But the foreign firm could not see any advantage in paying a tax, when their Japanese competitors did not, and so give them the trade advantage. Japan is playing both ends to win her own point. Through diplomatic channels, she recognizes Russia's claim to exclusive jurisdiction which of course makes Fu-tu-tien the treaty

of Harbin have been strenuously opposed by the American Consul, Mr. Fisher, and by the British and German Consuls at Mukden. There is not a single American merchant in the Harbin district, and only one or two British firms, who would be affected by the stand of the Railway Company, so the opposition on the part of

the part of the American Consul was so decided that the scheme was not carried out at the time. Yuan Shih-kai, while head of the Waiwapu, had also firmly refused to recognize Russia's claims in this direction, and his dismissal in January removed a formidable obstacle to the prosecution of the railway's policy. About the same

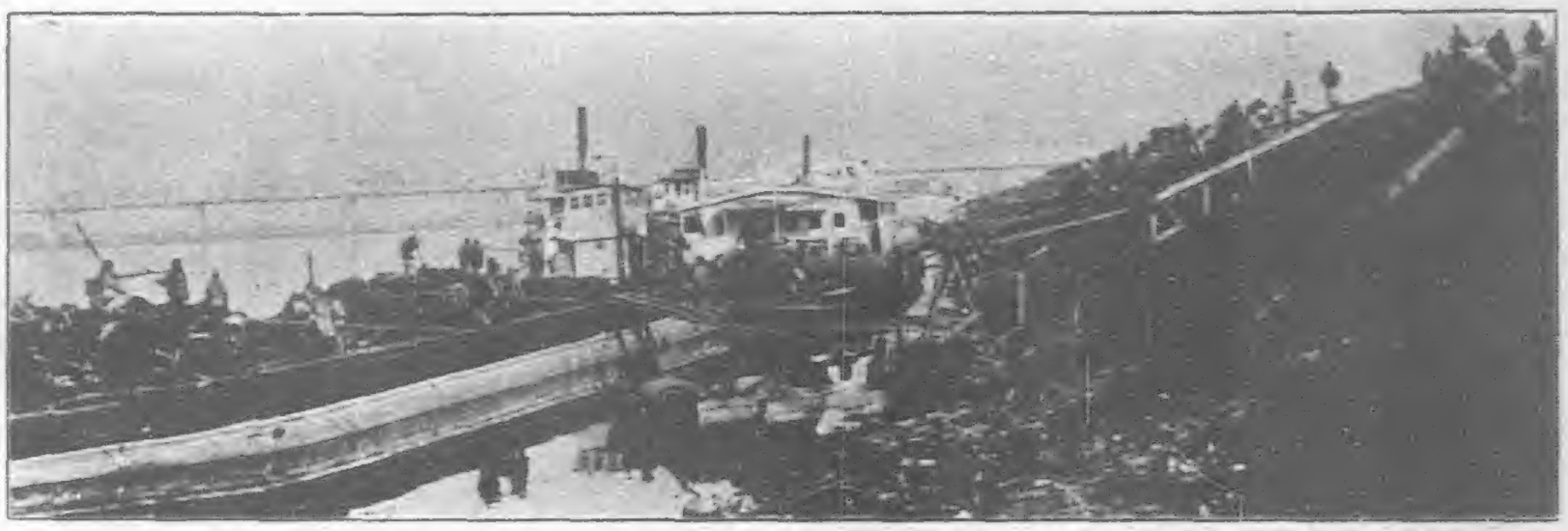
THE FLOUR MILL AT IMENPO, ON THE LINE OF THE C. E. RAILWAY

HARBIN: RIVER STEAMER



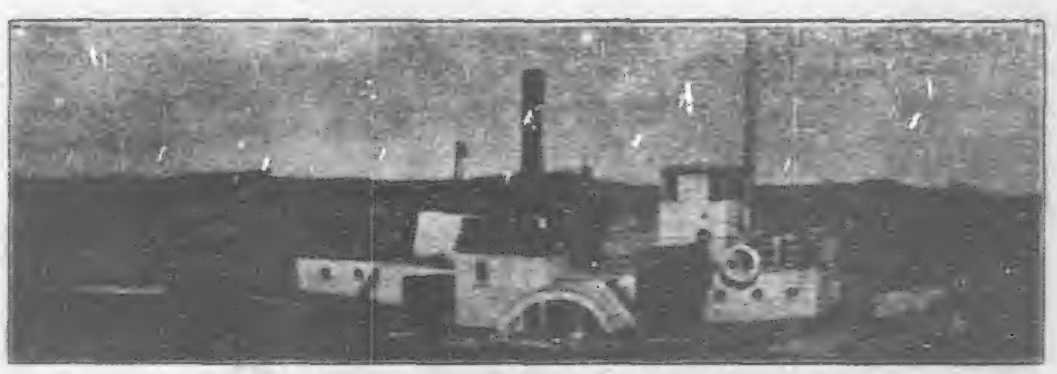
HARBIN: THE SUNGARI RIVER FRONT

time, Mr. Consul Fisher was ordered to Newchwang, on account of his health, and almost immediately Major General Hovarth put his pet plans into operation and created a Russian Municipal Council, consisting of members of his staff, with himself as Mayor. A code of obligatory regulations were then drafted and placed in force, which provided for taxation in various schedules, and also the obnoxious domiciliary obligations on residents as exists in Russia. This Municipal Organization failed to receive the recognition of other nationalities, with the sole exception of the Japanese. The Chinese have protested again vigorously and the American educated Taotai of Harbin, Shih Shao Che (Alfred Tze), a Cornell graduate,



HARBIN: HANDLING FREIGHT ON THE RIVER FRONT

HARBIN: THE MANCHURIA FLOUR MILLS



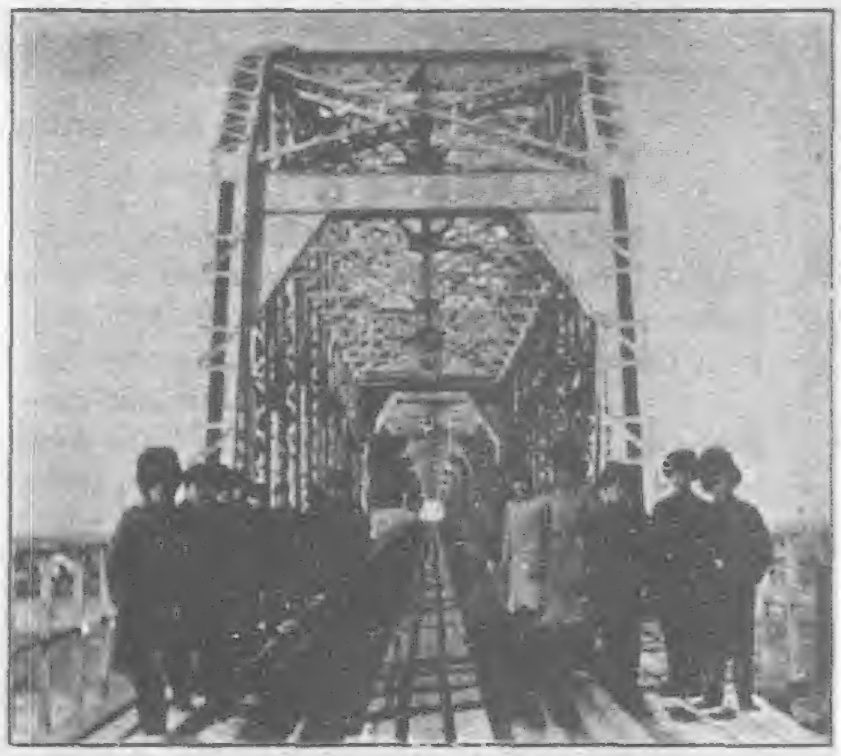
HARBIN: TYPE OF RIVER STEAMER

was ordered to Peking to place the matter in full before his Government. Gen. Hovarth was also called to Peking by his minister, and the question is now receiving the attention of both governments in the effort to arrive at a satisfactory settlement.

The crux of the situation lies in the interpretation of the original agreement between China and the Russo Chinese Bank. The official text of the document was in French, and Article 6 reads, "The Company will have the absolute and exclusive right of administration in its territory or lands." The Chinese version or translation omits this important sentence. It is unofficially claimed by the Chinese that their translation is the correct one, but the original document in Chinese was lost or stolen during the occupation of Peking by the Allied Forces. In Rockhill's Treaties the translation from the Chinese text fails to include the above lines from Article 6 of the French version.

The grave importance of the issue to China lies in the fact that large areas can be thus brought under foreign control and jurisdiction in the heart of the Northern Provinces. The Railway zone at Harbin itself covers an area of nearly 50 square miles, and the company has the right of acquiring about 150,000 more acres along the entire line, while the zone to the south, under control of the South Manchuria Railway, is nearly 40,000 acres, covered by the same terms.

The Railway Company has already assumed an aggressive attitude by driving out all Chinese merchants in the railway towns who refuse to recognize their authority or pay the taxes. The attitude on both sides to the dispute is uncompromising. Russia and China seem indisposed to give in on any point, while Japan naturally is an interested observer, throwing the weight of her influence with the former.



C. E. RAILWAY BRIDGE OVER THE SUNGARI AT HARBIN

BRICK WORKS NEAR HARBIN

If Russia refuses to recede from her position, the question eventually arises, What then? China is too weak to forcibly assert her idea of right, and Russia's actions are justified by the original French text of the agreement. If this document is the true one, other powers can not interfere, as Russia's action is in accordance with the rights surrendered by China, and does not therefore conflict with the Open Door Policy.

FLOUR MILLING IN HARBIN

(From Our Own Correspondent)

As outlined in the article on the "Rise and Fall of Harbin" appearing in this issue, the flour milling industry of that city and adjacent towns promised at one time to permanently lead all other manufacturing enterprises. The rapid development in Harbin alone earned for the city the permanent appellation of the "Minneapolis of the Far East."

HARBIN: PONTOON BRIDGE OVER THE SUNGARI BRANCH: SUNGARI FLOUR MILLS TO LEFT.

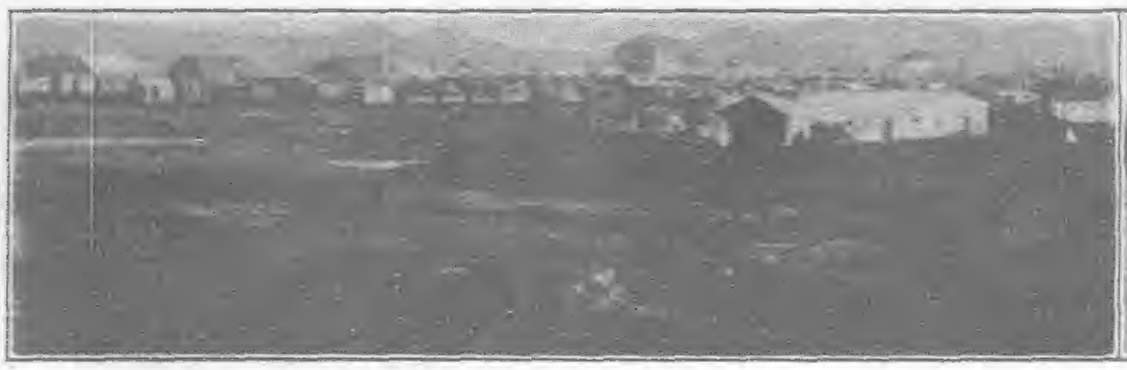
The first mill was started in 1901 producing 150 barrels a day, the second in 1902 with a capacity of 600 barrels, and a third, shortly afterwards. These were the only mills in operation previous to the war, and their profits were so great with the increased demand arising from the influx of the military, others were established as rapidly as the machinery could be transported and installed. In the early part of 1903, six mills were working with a daily capacity of 1440 barrels, all equipped with European machinery, with one exception, and that a small concern with American machinery. Then licenses were granted for two more large mills, and by October, 1903, there were eight mills with a daily capacity of 3,800 barrels, erected at a cost of over $650,000 gold.

Ten mills were in operation in 1904 producing 4,600 barrels or nearly 1,000,000 pounds a day. These mills were operated day and night and were taxed to the utmost capacity, earning enormous profits while the war lasted. They paid from 30 to 35 cents gold a bushel for the wheat delivered at the mills, and the producing area was capable of unlimited expansion to meet the demand.

Several more mills were projected and erected later making a total of 16 mills in Harbin or its vicinity. Most of them were constructed of brick and stone and equipped with the best Austrian and American machinery. In addition to the mills in Harbin, one was erected at Kwangchengtse of 150 barrels capacity, one at Kirin with equal capacity, and another of the same size at Port Arthur. Along the line of the Chinese Eastern Railway at convenient points others followed, for instance, at Hailar, Swanchengpu, Iunampo, Asheho, Fuliardhe, Tsitsihar, while a number were located in the Ussuri District. In South Ussuri, near the Pacific Coast, there were erected twelve steam flour mills and a number operated by water power. The production of these mills alone averaged 450,000 barrels per annum. A list of the flour mills of Northern Manchuria under Russian control follows:

*FLOURING MILLS IN NORTHERN MANCHURIA, ON LINE OF THE CHINESE EASTERN RAILWAY

1	Sungari Flouring Mills, No. 1, Harbin	1800	bbls. per day
2	Sungari Flouring Mills, No. 2, Harbin	800	" "
3	Kovalsky Flouring Mills, Harbin	1200	" "
4	Zuzulinsky Flouring Mills, Harbin	1000	" "
5	Southern Flouring Mills, Swanchengpu	750	" "
6	Miyakoff Flouring Mills, Hailing	750	" "
7	First Manchurian Flour Mill'g Co., Harbin	750	" "



CHINESE EASTERN R.R.—THIELING STATION.

KWANGTCHULIN STATION BETWEEN HARBIN AND KWANGCHINGTZE.

* Total Harbin mill capacity 6,000,000 bushels wheat per year. 50 to 65 kopecks a pood (36 lbs.)

HARBIN: THE SECOND BRIDGE OVER THE SUNGARI.

TSITSIHAR: THE YAMEN OF THE GOVERNOR OF HEILUNGKIANG PROVINCE

8	Russian Flour Mill'g Co., Harbin	900 bbls.	per day
9	Eastern Flouring Mills, (Drizen), Harbin	400	" "
10	Blagovechensk Flour'g Mills Co., Harbin	550	" "
11	Riff Flouring Mills Co., Harbin	400	" "
12	The Groat Production Co., Harbin	200	" "
13	Rostovskoe Flouring Mills Co., Harbin	150	" "
14	The Borodin Flouring Mills, Old Harbin	550	" "
15	The Tihomiroff Flouring Mills, Inuanpo	900	" "
16	The Erushinolsky Flouring Mills, Asheho	200	" "
17	The Ya-Sun-Dao Flouring Mills, Hailin	200	" "
18	The Kuliaeff Flouring Co., Fuliardhe	220	" "
19	The Chinese Flouring Mills, Tsitsihar	200	" "
20	Swanchengpu Flouring Co., Swanchengpu	250	" "
21	Ki-Feng-Tai Flouring Mills, Kwanchengtse	200	" "
22	Melnikoff Flouring Mills, Kwanchengtse	250	" "
23	Samsonovitch Flouring Mills, Harbin	200	" "
24	Tetukoff's Flouring Mills, Harbin		
25	Skidelsky Flouring Mills, Harbin (formerly the Riff Flouring Mills, Co.)		

With the cessation of hostilities and the withdrawal of the troops came the inevitable crash and depression. Half the mills suspended operations and, gradually, others were forced to close down, leaving only three mills at work during the latter part of 1908. Conditions went from bad to worse for there had been no serious attempt to cultivate a new market. The Chinese, while fond of the flour, consume a vast amount of cheap, coarse, inferior stuff the chief attraction of which is its very low cost. Scattered over Manchuria are hundreds of small native mills where the most primitive methods are employed, and while the daily output is small, the aggregate is large and materially affects the marketing of the machine-made product.

To complicate the development of a market for the Russian mills, the appreciation of silver and the temporary increased purchasing power of the natives, due to the war, permitted the profitalbe importation of American flour. The imported article did not, however, come in competition with Russian mills up north, as it was consumed in the neighborhood of Mukden and Tiehling and never reached the territory north of Changchun. The first importation of American flour into Manchuria occurred in 1899, and in up to 1904 there was an annual average quantity imported of 70,000 to 80,000 bags. In 1905 and 1906 these importations rose to a total of 2,500,000 bags. Since the latter end of 1907, however, the demand steadily declined, owing to the depreciation of silver and the competition of the native mills. The American flour was both superior in quality and higher in price and at Mukden it was sold for $1.35 gold a bag, while the native product brought .90 cents gold for the same quantity.

HIS EXCELLENCY CHOU SHU-MU, GOVERNOR OF HEILUNGKIANG PROVINCE (TSITSIHAR)

In addition to the South Manchurian market being lost to the Russians through American competition and the small native mills, the Japanese loomed up as a formidable trade opponent in establishing their own mills. The Manchurian Flouring Mill Company was organized and a plant having a capacity of 1,600 bags a day was erected at Tiehling. This mill is working successfully and its product can be found in all the stores in Mukden. The company also proposes the erection of three more mills, one at Liaoyang, one at Antung, and another at Newchwang.

All of these conditions contributed to injure the expansion of Harbin's industry. As a way out of the difficulty a flour trust was proposed and organized by the Russian millers to control production and price. The railway was included in the scheme so as to participate with capital and to grant favored rates for land and water transportation, as well as by concessions of land in the railway zone. The details of the trust measured the ambition of its promoters. The local grain market was to be controlled and the organizers entertained hopes of an immense export trade and of the conquest of foreign markets. The proposed capitalization was 4,000,000 roubles of which the millers would furnish 1,000,000 and the railway the balance. The estimated output was 80,000 pounds of flour a day. The representative of the company also petitioned the Minister of Finance for a subsidy, emphasizing the necessity of such assistance to foster the growth of Russian political influence in the East. The alluring suggestion apparently failed, for we later find the Sungari and four other mills incorporated into one company. It appears that the mills were able to float a large loan from the Russo-Chinese Bank on the security of their plants and properties, and on this basis some have been able to continue operations.

And thus the end has come to the Russian dreams of a great Oriental Moscow. Subsidies, bounties, favored rates, banking protection, and other governmental and private facilities have been tried and have failed. At first the world looked on and wondered, viewing the marvelous growth and development with alarm. With millions of cheap and effective laborers, unlimited expanse of good wheat country, plentiful supply of fuel and exceptional rail and steamer facilities to the ports of the Pacific, all contributed to make Northern Manchuria a serious menace to other wheat growing and exporting sections of the globe.

TSITSIHAR: THE CAPITAL OF HEILUNGKIANG PROVINCE. MAIN STREET

The cost price of wheat, delivered at the mills, never exceeded 50 cents gold a bushel and varied generally between 30 and 40 cents. The wheat produced about 75% of flour. The prices received ranged from $2.50 gold a hundred pounds for the best grades to $1.00 gold per 100 pounds for the very lowest, while bran brought .25 cents a pound. The mills had the advantage of low railway freights and the $4.00 per ton rate from Harbin to the seagoing steamers at the mouth of the Amur was exceptionally favorable. The profits varied from 15 cents to 45 cents gold a hundred pounds of grain milled. But the stimulus of the army has gone, and it would appear that Russian business ability cannot cope with the many obstacles to developing a legitimate trade.

Harbin, today, presents the appearance of a town in decay. No smoke arises from the many stacks and there is an air of listlessness and abandon, in place of the former feverish excitement.

The future of this city is difficult to anticipate. Under normal political conditions, with the good will of the people and a continuation of the paternal solicitude of the Russian government, there is hope of regaining some of the lost ground. The closing of Vladivostok as a free port will protect Siberian mills from outside competition, but unless some energetic and systematic effort is made to cultivate the native Chinese trade, the future of the industry is hopeless. It would prove a herculean task to rehabilitate this industry and put it in a flourishing condition. Russia's opportunity in Manchuria has been irretrievably lost. Where, at the outset, her liberal, extravagant policy in many matters with the natives, won their good will, now the reverse obtains. Russia's political tactics in Harbin and the railway zone have won for them the cordial hate of the native and the open opposition of the Chinese government. While organized boycott has not been inaugurated, there is a tacit understanding among the Chinese traders to purchase from Russia only when absolutely necessary, and among the farmers the tendency is to combine and force higher prices for their wheat. All the combined efforts of the government, railway, bank, and the mills cannot overcome the passive resistance of the Chinese.

The Chinese authorities are making strenuous efforts to colonize the northern provinces and bring the waste lands under cultivation especially in Heilung Kiang province. Nearly 600,000 acres have recently been planted in cereals. It is estimated that the total production of Northern Manchuria is nearly 200,000,000 bushels of various cereals, about half of which is consumed locally. The balance is largely purchased by the Russians for their own consumption across the border in the Trans-Amur district. The low productiveness of the Amur regions, insufficient to meet local demands, causes the government to turn to Northern Manchuria to meet the deficiency. Russia may encourage the Harbin mills to extend the sale of their products in this direction, but if present conditions in regard to the Chinese cannot be ameliorated, the final crash is inevitable.

G. B. R.

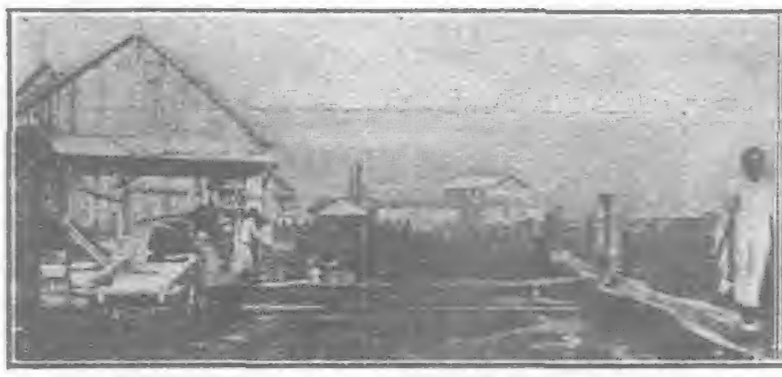
RUSSI'AS MINING INDUSTRY IN THE FAR EAST

St. Petersburg.—The question whether we shall protect our Far Eastern territory—of so great an importance for us—from the usurpation of our warlike neighbors depends neither on the number of troops we maintain there nor upon the speedy building of the Amur Railroad, nor, in fact, upon any other military or strategical measures, but upon our ability to duly organize the colonization of this territory, and to develop its industries, chiefly the mining industry. The richness and diversity of minerals in Russia's Eastern provinces are *undoubted, but nobody is working at them.* Attempts have only been made to mine gold and coal, which, should the work be well organized, ought to give brilliant results. [1] Along the

[1] *Mining Journal's* correspondent at St. Petersburg.

HARBIN: COMMERCIAL CLUB

COMMERCIAL SCHOOLS AT HARBIN



HARBIN: FLOUR MILLS

VIEW OF MANCHURIAN FLOUR MILLS

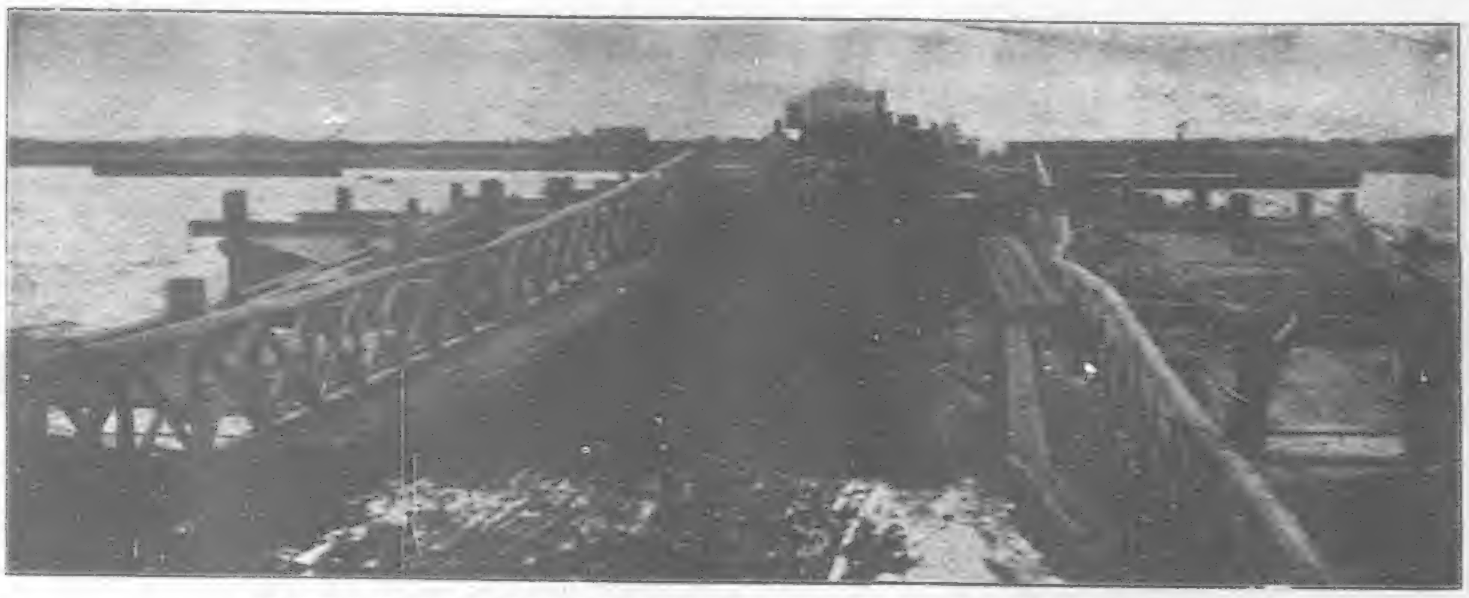
CHANDECHEZ, A STATION ON C. E. RY. BETWEEN HARBIN AND MANCHURIA

C. E. RY. STATION AND YARDS AT MANCHURIA

HARBIN: HEADQUARTERS OF GENERAL STAFF FOR TRANS-AMUR DISTRICT

C. E. RY. STATION AT IMJANPO. HAS LARGE BREWERY

A TYPICAL STATION ON THE C. E. RAILWAY



PONTOON BRIDGE OVER THE SUNGARI BRANCH AT HARBIN

whole extent of our Pacific coast there is not a single metallurgical factory or a well-organized mining enterprise. Some of the existing enterprises—for instance, Makovsky, on the Sakhalin—are liquidating business; others, instead of mining the best imaginable coal, bury gold in the ground, without any hope of ever extracting it. The chief reasons for such mining stagnation are: limiting laws regarding the mining industry, absence of capital, and lack of knowledge and energy. In vast territories along the Pacific and Okotsk coasts the mining industry was prohibited by the Government, owing to the special "importance of the localities in a

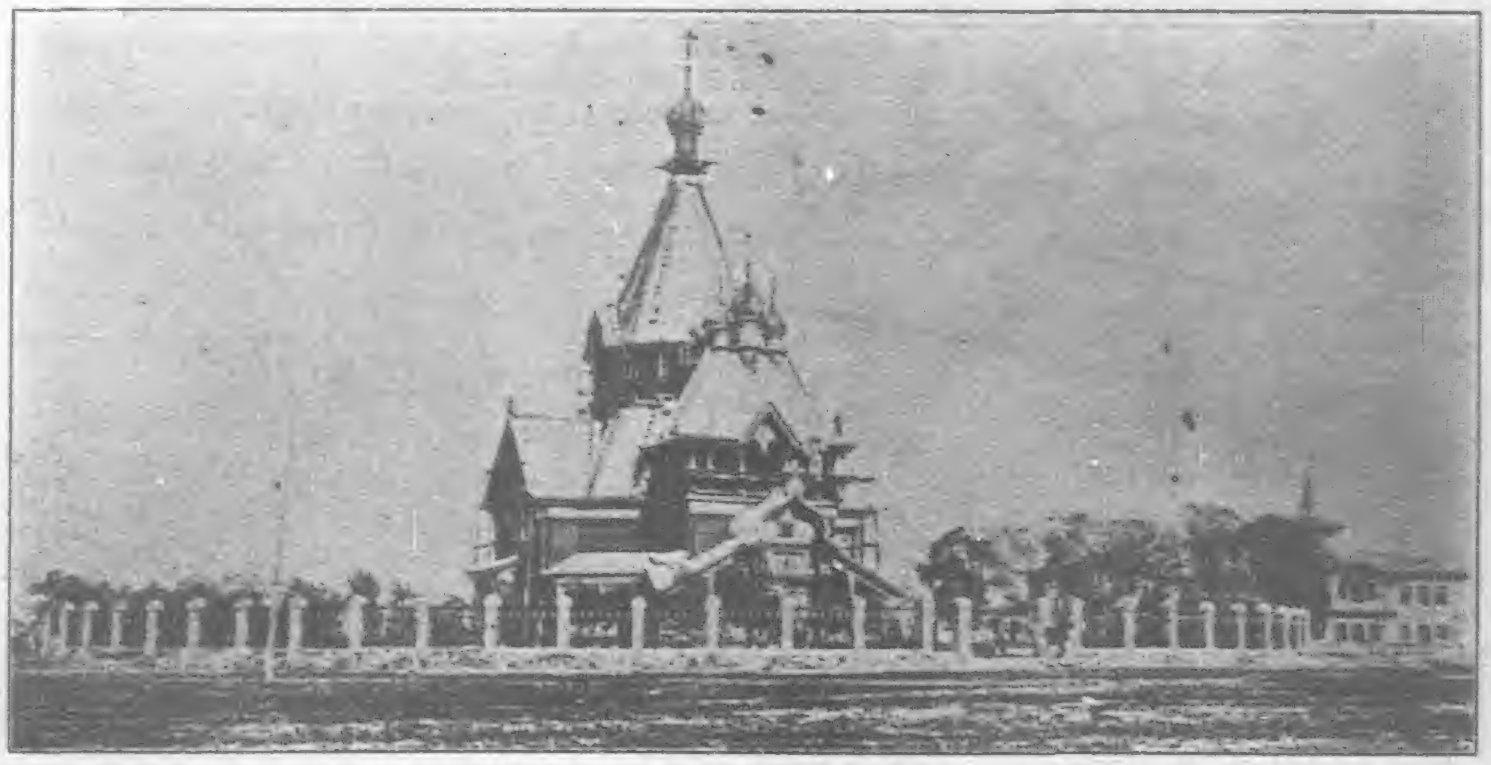
A STATION ON THE C. E. RAILWAY

HARBIN: THE RAILWAY BRIDGE OVER THE SUNGARI

military strategical respect. Only recently the Okhotsk coast was opened for mining, and now the Government contemplates doing the same for the so-called 100-verst strip of the Pacific coast. Russian capitalists do not venture to undertake anything in the Far East, in view of the remoteness of the country, economical and political uncertainty, and constant threats from the side of Japan. Some of the operators would be willing to undertake any industrial business, iron or coal, but require guarantee and loans from the Government, wishing to mortgage them materials, coal, and rails, which they will supply to the Government. Others require the Government to pay them, in advance, half of the price of the whole order given, and after receiving such an advance they are ready to invite foreign capitalists to participate in the enterprise. It is most interesting to note that the Government has sometimes complied with such requests, and loaned big sums to non-existing works, and certainly the results for the Government were most deplorable. It is difficult to hope at present that Russian capital will be invested in the Far Eastern industry. Owing to its internal loans the Government withdraws Russian capital from industrial enterprises, and the exorbitant interest (6 to 7 per cent.) paid on such loans induces such capital already invested in industrial enterprises to be transformed into Government interest-bearing paper. The revival of industry in the Far East is at present possible only with the help of foreign capital, and the Government ought to give all possible encouragement to foreigners who would honestly and seriously take this matter in hand. I am sorry to state that the reactionary Press—whose opinion the Government considers—at every new foreign enterprise undertaken in Russia, begins to raise its voice, lamenting the "sale of Russia to foreigners," arousing political and economical difficulties.

The Government and the State Duma have decided to retain our Far East territory at any cost, which is quite comprehensible, because the Amur and the adjacent Primorsky region are Russia's future colonization and industrial reserve. Moreover, the Far East can hope for a great development of the mining industry, because in the vicinity there exist quite ready and secure markets—in the first place, Japan, where oil is wanted as fuel for their torpedo fleet, and China, with the new requirements of its 500,000,000 population. The Chinese and German merchants have already come to understand what profitable business might be done with the latter, and are already soliciting from the Russian Government concessions for oil extraction in Sakhalin. Besides oil, the Far East is rich in coal; and, at the same time, the Amur region consumes enormous quantities of foreign coal—viz., Japanese, British, Westphalian, and even Australian, paying over 4,000,000 roubles, chiefly to the Japanese.

As to other imports to the Far East, we may mention that, according to data of the Custom Dues Department, 4,000,000 poods of iron (in 1903, before the war, 1,000,000 poods, and in 1906, 2,000,000 poods) have been imported during the period of from 1901 to 1906. Calculating the price of iron at Rs. 2.50 per pood, it is evident that Russia has paid to foreigners, during the last six years, over 10,000,000 roubles for the very same product, heaps of which are wasted along the shores of the bay of St. Olga. Lack of yards and works in Vladivostok obliges the Government to send ships in separate parts, spending millions of roubles for transport. The



THE CHURCH IN THE ADMINISTRATION CITY, HARBIN

Amur Railroad will require 10,000,000 poods of rails; calculating 1 rouble per pood, this will amount to 10,000,000 roubles. If Russia would only work its own iron mines along the shores of the St. Olga bay it need not spend a single rouble on foreign iron, and the Amur Railroad would be built of home material.

The gold industry is also awaiting a great future: with the adoption of cheap modes of working gold mines, dredges, and excavators, the yield of this metal, now reaching 600 poods per year, will grow to an enormous extent. Moreover, new enterprises begin to be created in the north-east of Russia—viz., on the Tchukotsk peninsula and the Okhotsk shore.

HARBIN.—ACCOUNTING DIVISION OF THE C. E. RY.—BUILT FOR RAILWAY CLUB HOUSE.

HARBIN.—RESIDENCE OF ENGINEER.

THE HON. LAO-KE (ALFRED SZE)
CUSTOMS TAOTAI, HARBIN—A. B. 1901; A. M., 1902, CORNELL.

Foreign capital, knowledge, and energy will find here a vast field of development. Let us hope that the British-Russian friendship will induce not speculative persons, but serious capitalists to invest their money in Russian enterprises, and I am sure that they will find it worth while, and that their trouble and investments will bring them a good profit.

On January 1, 1909, the term for duty-free entry of machinery for the Ural and Siberian gold mining industry expires. This attracts general attention, and, as I have already written you, it was generally expected that the above term would be prolonged. But at present the Minister of Trade & Industry objects to it, giving as reason that, the amount of such machinery being very limited, the expense of gold miners will not amount to any considerable figure, whereas the duty-free entry of above machinery is in contradiction with the general protection system of our Government, and gives cause to other branches of industry to ask for similar exemptions. Therefore it is likely that a duty will be fixed on the above machinery. A deputation of gold miners hope to have an interview with the Minister on the subject.

PROPOSED PHILIPPINE REVENUE CUTTERS

The Bureau of Customs of the Philippine Islands contemplates the acquisition in the near future of two vessels suitable for use as revenue cutters in the Philippine Islands Customs Service. These vessels are intended for patroling and scouting along the coasts and through the tortuous and, in some places, shallow waters of the Philippine Archipelago for the purpose of preventing smuggling from neighboring islands. The principal points to be considered in designing them will therefore be light draft, low free board, stability, quick action, and speed. As the vessels will be especially designed for this class of service and will not be required to carry cargo other than its own stores, and as cabin accommodations will be provided for the necessary customs officials only, the expense that would otherwise be involved in fitting them for passengers and cargo may be devoted to increased efficiency.

The proposed act of the Legislature authorizing their purchase specifies that they shall be of steel, not less than 140 feet in length over all with proportionate draft and beam suitable to the requirements, fully equipped and furnished, ready for service, capable of not less than sixteen knots mean speed; each armed with one rapid fire one-pounder gun and two machine guns, provided with suitable search lights, electric, distilling, and cold storage plants, and furnished, in addition to the usual life boats, with one fast deck launch, propelled by steam or gasoline, not less than 32 feet in length, and capable of developing 22 knots per hour.

Prior to deciding where the vessels shall be constructed the Bureau of Customs has expressed a desire to receive from reliable ship builders plans and specifications of vessels that will meet its requirements as well as the terms at which they would be willing to enter into a contract to furnish them.

*THE LAW CONCERNING JAPAN'S SUBSIDIES TO DISTANT NAVIGATION

The particulars of the law relating to distant Navigation as introduced into the present session of the Diet are as follows:—

1. *The Contract for Subsidies.* The Minister in charge may grant subsidies to those subjects of the Empire or those companies composed of Japanese subjects alone, for a period not

* Japan Financial and Economic Monthly.

HARBIN.—HOME OF MILITARY GOVERNOR.

HARBIN.—TAOTAI'S YAMEN IN PRISTAN.

CHINESE EASTERN RAILWAY: A TYPICAL STATION

shorter than three and not longer than ten years. Subsidies may be granted to the following lines:

(1) European lines.
(2) North American line.
(3) South American line.
(4) Australian line.

2. *Subsidized Vessels.*—The vessels to be subsidized must be over 3,000 tons and must have a speed of over 12 knots. They must have met certain requirements appointed by the Minister in charge and must be built of steel and their age must not exceed 15 years, while the speed is figured out by the standard appointed by the Minister in charge.

3. *Subsidies and Foreign Vessels.*—Foreign made ships may not have the privilege of being subsidized, provided that those ships, whose period of service has been 5 years and which have the sanction of the Minister in charge, form an exception.

4. *Navigation Subsidies.*—The amount of subsidies is less than 50 sen per ton, per 1,000 nautical miles for a vessel possessing a speed of 12 knots per hour; provided that an increase of 10 per cent will be made according to an increase of 1 knot per hour, but to the vessel whose period of service is more than 5 years, there will be a decrease of 5 per cent, and to foreign made ships, about a half of such subsidies granted to Japanese ships will be made.

To those ships which were built under the special sanction of the Minister in charge and those vessels which have not been running more than 5 years since the period of service was commenced, subsidies amounting to 25 per cent will be increased. To a fraction less than 1 ton and a mile no subsidies will be granted.

5. *Subsidized Lines and Freight Charge.* The passenger and goods freights will be charged under the sanction of the Minister in charge. If the Minister in charge finds it necessary, certain kinds will be specified, according to which the passenger and freight charges must be scaled.

6. *Subsidized Vessels and Mail Matter.*—Subsidized vessels must convey mail matter free of charge, and proper provisions must be made for conveying wireless communications, and also officials dispatched by the government must be conveyed free of charges.

7. *Subsidized Lines and Provisions.*—In obedience to the instructions of the Minister in charge, proper equipments shall be made to carry on periodic services.

8. *Subsidized Routes and Training of Seamen.*—According to the directions given by the Minister in charge, the seamen must be shipped for service according to the following rates:

(1) From 3,000 to 5,000 tons—4 seamen.
(2) From 5,000 to 8,000 tons—5 seamen.
(3) The total tonnage over 8,000 tons—6 seamen.

9. *Navigation Subsidies and Employees.*—Unless specially sanctioned by the Minister in charge, foreigners may not be employed in the principal and branch offices of subsidized companies. In case foreigners have to be used, the captain must report the case to the minister in charge.

10. *Subsidized Lines and the Statement of Accounts.*—In accordance with the instructions given by the Minister in Charge, a statement of accounts and the condition of business should be reported.

11. *Subsidized Ships and Chartering.*—The Minister in charge may fix a reasonable sum of compensation and may charter subsidized vessels for public use.

12. *The Transference of Subsidized Vessels.*—Subsidized vessels may not be transferred to foreigners within the three years counting from the time when such subsidy expires, except when the subsidized amount is paid off or when, owing to calamity, navigation is found impossible, this law does not apply strictly.

13. *The following points will be settled by the Minister in charge.*

(1) The starting and touching points and terminus of subsidized lines.

(2) The number, tonnage, and speed of subsidized vessels and their substitutes.

(3) The time, and days of subsidized navigation.

(4) The *modus operandi* for the payment of subsidies.

THE C. E. RAILWAY: THROUGH THE KINGDOM MOUNTAINS

(5) The suspension, redemption and other settlements of subsidized vessels for not fulfilling their obligations.

These laws will take effect from 1st January 1910 and will supplant the preceding naval encouragement laws. To foreign ships registered previous to September 30th 1899, the regulation No. 4 is not applicable.

A STATION ON THE C. E. RAILWAY

SMALL COAL MINE OPERATED BY RUSSIANS ON LINE OF THE C. E. RY.

FUSHUN COAL MINES

Location of Fushun Colliery.—Deviating from the Main Line of the South Manchuria Railway at Su-chia-tun Junction, 267 miles from Dairen, runs a branch line for Fushun 34 miles in distance and almost parallel to the River Hun. The terminal station is Fushun, and the next one this side the terminus is Chien-chin-chai which is the station for the famous Fushun Colliery.

FUSHUN COAL MINES OF THE SOUTH MANCHURIA RAILWAY CO.: PANORAMIC VIEW OF THE MINES AT CHIEN-CHIN-CHAI, NO. 1.

The coal field covers a distance of ten miles from west to east taking a parallel direction with the River. The width of the workable deposits measures at least a mile, and the thickness of the seam which dips in towards the north at the average grade of about 30 ranges between 120 and 175 feet. The most conservative estimate of coal in the belt is placed at eight hundred million tons. The present daily output is about 1,700 tons; but preparations are in rapid progress to increase it up to 6,000 tons in the near future.

Particulars of Fushun Steam Coal. Quality of Fushun Coal.—Fushun coal was, as most of Japanese coals, formed in the Tertiary period, and is of good uniform quality. It is of a lustrous black color. It is a bituminous coal rich in volatile matter, with a heating power of seven thousand five hundred (7,500) calories. Ash and clinkers are very scarce, and sulphur and other objectionable matters are almost non-existent.

Use of Fushun Coal.—As fuel for locomotive and marine engines, Fushun coal can compete with the best Japanese coal. Because of the large percentage of volatile matter which it contains, Fushun coal is more suited for gas making than any other coal that can be found in the East. It is also suitable for general industrial uses, for brick and lime kilns, smithies, household uses, etc.

Fushun coal does not stick to the grate when it burns, so that even an inexperienced fireman can make a fire with it very easily. It catches fire as soon as it is put into the furnace

FUSHUN COAL MINES: ELEMENTARY SCHOOL HOUSE AT CHIEN-CHIN-CHAI

FUSHUN COAL MINES OF THE SOUTH MANCHURIA RAILWAY CO.: PANORAMIC VIEW OF THE MINES AT CHIEN-CHIN-CHAI, NO. 2.

facilitating an easy cleaning of fire with little loss of steam pressure. Fushun coal gives out very little smoke.

Fushun coal takes fire so very quickly that heat is diffused rapidly and at once, therefore the draft must be carefully arranged. What little ash there is falls easily through the grate, and care must be exercised that the fire proper is not shaken down with the ashes. When this coal is piled up in heaps higher than ten feet it is advisable to provide ventilation.

Reports on Trials of Fushun Coal.—Fushun coal was used on board the steamer *Kaijo Maru* of the Osaka Shosen Kaisha, from July 2, 1908, to August 6, 1908, for three consecutive voyages from Moji to Dairen and return, the results of which, compared with Tagawa coal, one of the best Japan coals, are as follows:

To make the trial as fair as possible the engines were put in as nearly a similar condition as possible for each kind of coal, but it may be noted that the fact that the pipes were cleaner when the Fushun coal was used than they were when Tagawa coal was used may have had some effect to the disadvantage of the latter.

July-August, 1908.

Date		2 to 4	7 to 9	16 to 18
Coal		Tagawa	Fushun	Tagawa
Pressure		118 lbs.	181 lbs.	181 lbs.
Expansion		6.2	6.0	6.0
Revolution		81	81	80
Consumption in 24 hours		37.2 tons	34.8 tons	38.4 tons
Ash		16%	12%	18%
Draft	Fore	10′ 10″	9′ 11″	12′ 11″
	Aft	15′ 01″	14′ 00″	15′ 00″

Date		21 to 23	30 to 1	4 to 6
Coal		Fushun	Tagawa	Fushun.
Pressure		181 lbs.	181 lbs.	181 lbs.
Expansion		6.0	6.0	6.0
Revolution		80	80	80
Consumption in 24 hours		36.4 tons	37.9 tons	36 tons
Ash		13%	17%	13%
Draft	Fore	10′ 7″	12′	9′ 7″
		14′ 9″	15′ 2″	14′ 10″

From this table it is clear that Fushun coal has given better results all round than Tagawa coal.

The characteristics of Fushun coal are as follows:

Fushun coal is of a dark brown color and weighs one ton to 42 cubic feet, somewhat lighter in weight than Tagawa coal. When it burns there occurs an escape of gas making a crackling

FUSHUN COAL MINES OF THE SOUTH MANCHURIA RAILWAY CO.: PANORAMIC VIEW OF THE MINES AT CHIEN-CHIN-CHAI, NO. 3.

noise and giving off a liberal quantity of volatile matter. It burns very readily, and soon becomes spongy, but it is very fragile so that the clinkers do not stick to the grates. The flame is longer and the coal burns more quickly than ordinary Japan coal. It leaves very little ash and clinker.

The results of the trial of Fushun coal made on the *Fujisan Maru* of the Mitsui Bussan Kaisha on a voyage from Newchwang to Moji on May 24, 1908, were as follows:

Weather: Fair. Head breezes; calm sea.

Draft: 17 ft. 2 in. at bow; 17 ft. 5 in. at stern.

Speed: Of engine, 10.9 knots; of ship, 9.5 knots.

Pressure: 175 lbs.

Revolutions per minute: 60.

Horse-power: 985.

Consumption per 24 hours: 24 tons.

Consumption per horse-power per hour: 2.2 lbs.

Space per ton: 42.4 cubic feet.

Ash: 12%.

Kind of coal: Fushun unscreened coal.

FUSHUN COAL MINES: OFFICIAL'S QUARTERS AT CHIEN-CHIN-CHAI

The coal is of good quality, not too hard, black in color and with a strong lustre. When taken into the fire the coal burns up immediately with a slight crackling noise. Its heating power is very great, there are few clinkers, which do not stick to the grate. It is a kind of coal which an inexperienced fireman could easily manage. As the coal is of good quality and burns easily, the fire can be kept up with fewer hands than can ordinary coal. The pressure may be maintained only by the frequent leveling of the fire with the fire-rake and without any effort at airing. As the coal does not cake, the fire can be moved from one boiler to another very easily, thus facilitating a change of boilers, with little loss of pressure. As it burns so readily, what little loss of pressure there is can be speedily regained, and we believe Fushun coal is very superior in this respect. As the smoke is very thin (combustion on the grate being almost complete) this coal is most suitable for steamships. It has very little sulphur, so that there is not much deterioration to the boiler-plate resulting from its use.

A trial of Fushun coal made on the *Amakusa Maru* of the Osaka Shosen Kaisha during a voyage through the Yellow Sea on July 19, 1908, resulted as follows:

Weather: Sea was rather calm; head breezes.

Steam Pressure: 165 lbs.

Revolutions: 75.8.

Net horse-power: 1,894.44.

Speed in water: 12 knots.

Speed of engines: 13.5 knots.

Consumption per horse-power per hour: 2,335 lbs.

Consumption per square foot of grate area per hour: 34.5 lbs.

Consumption per 24 hours: 47.306 tons.

Ash: 8.1%.

Fushun coal is of fine quality, very black, with a good lustre. It burns with a slight crackling noise and shows a little caking.

It catches rapidly and in heating power is not inferior to Moji coal (the Japanese standard variety). The small quantity of smoke given off proves how complete is the combustion. The clinkers are few, allowing the use of the same grate for six consecutive hours, whereas Tagawa coal can only be burned for four hours continuously without change of grates.

The results of a trial made at the brick factory of the Company were as follows:

Fuel: Unscreened coal. :

Quantity consumed: 3 tons per 10,000 pieces.

No. of kilns: 24 compartments.

Kind of kiln: Continuous flat kiln.

The continuous flat kiln is an improved form on the Hoffman system, twelve compartments comprising one set, the fire passing around the compartments and baking the bricks. In the trial 3,400 bricks were baked in a little more than 20 hours.

We find that on account of the longer flame of the Fushun coal and the greater diffusion of its heat, it is very easy to send the heat from one kiln to another. The kilns are still new (only two or three months have passed since they were completed) and although three tons of coal were used for making every ten thousand bricks it is expected that the quantity of coal can be much reduced in the future.

FUSHUN COAL MINES: WORKMEN'S QUARTERS AT CHIEN-CHIN-CHAI

The following is the result of an analysis of Fushun coal made at the laboratory of the Natural History Museum, Hamburg, on Feb. 4, 1908.

"Certificate applied for by Dr. Prof. Gottschhe.

FUSHUN COAL MINES: POST OFFICE AT CHIEN-CHIN-CHAI

FUSHUN COAL.

	Percentage.	Percentage when water and ash have been extracted.
Carbonic acid	72.58	78.75
Hydrogen	5.37	5.83
Sulphur	0.69	0.75
Nitrogen	1.31	1.42
Oxygen	12.22	13.25
Water	6.48	0.00
Ash	1.35	0.00

The ash consists of salicic acid, oxidized iron and clay. There are traces of lime, magnesia and maganese."

Analyses made at the Miike Coal Mine, the Naval Briquette Factory, the Edamitsu Steel Works and the Fukuoka Mine Superintendent's Office.

MAY, 1905.—MIIKE COAL MINE. ANALYSIS OF FUSHUN UNSCREENED COAL.

Water	6.7067%
Volatile Matter	36.2133%
Fixed Carbon	51.1400%
Ash	5.9400%
Color of Ash	Light brown.
Sulphur	1.2298%
Specific Gravity	13.130%
Calories of Heat	7260.

SEPTEMBER, 1906.—NAVAL BRIQUETTE FACTORY, TOKUYAMA.

	Sample A.	Sample B.	Sample C.	Sample D.
Volatile Matter	56.51	43.67	48.40	44.36
Solid Carbon	40.93	54.08	49.52	53.76
Ash	2.56	2.25	2.08	1.88
Character of Coke	raw	raw	raw	raw
Sulphur	0.64	0.88	0.60	0.65

REMARKS:—Little ash remains. Mixed with anthracite coal it would be suitable for making briquettes.

1907.—IMPERIAL STEEL WORKS, EDAMITSU.

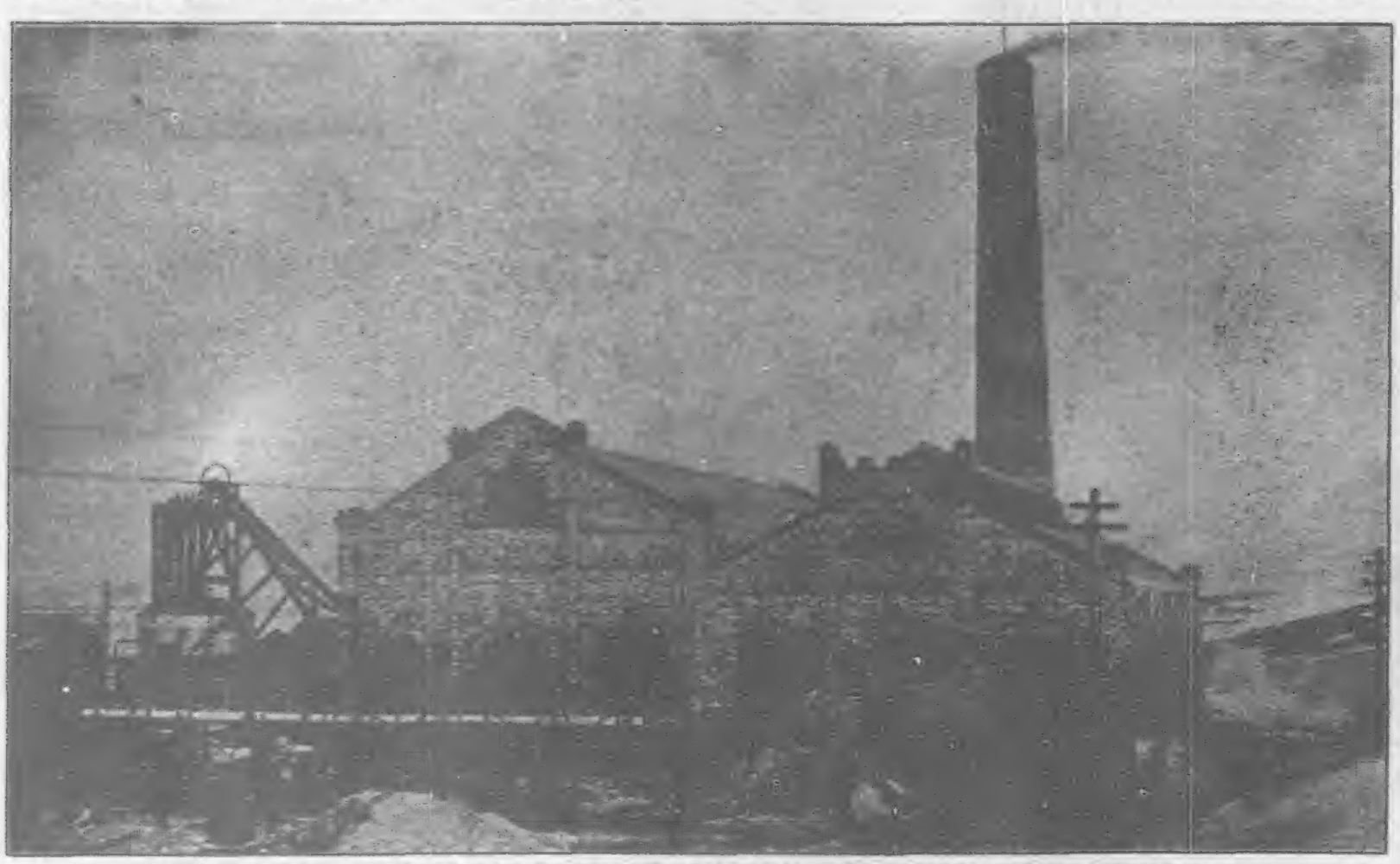
	Sample A	*Sample B*
Water	4.61	6.53
Volatile Matter	54.78	49.44
Coke	38.26	42.36
Ash	2.35	1.69
Phosphorus in ash	0.34	0.206
Sulphur	0.728	0.769

"Kabari" means "hard part of the seam."

SEPT. 1907.—FUKUOKA MINE SUPERINTENDENT'S OFFICE

	FUJI "kabari"	YAMATO "kabari"	ASAHI "kabari"	SAKURA "kabari"
Water	6.640	8.725	4.555	6.295
Volatile Matter	33.210	26.975	41.215	33.815
Solid Carbon	60.150	64.300	54.230	59.890
Ash	4.920	2.340	2.990	2.070
Color of Ash	brown	light gray	light brown	light yellow
Sulphur	0.740	0.480	0.640	0.430
Phosphorus	0.180	0.350	0.470	0.120
Specific Gravity	1.280	1.270	1.220	1.270
Calories of Heat	7.040	7.510	7.480	7.480

FUSHUN POLICE STATION



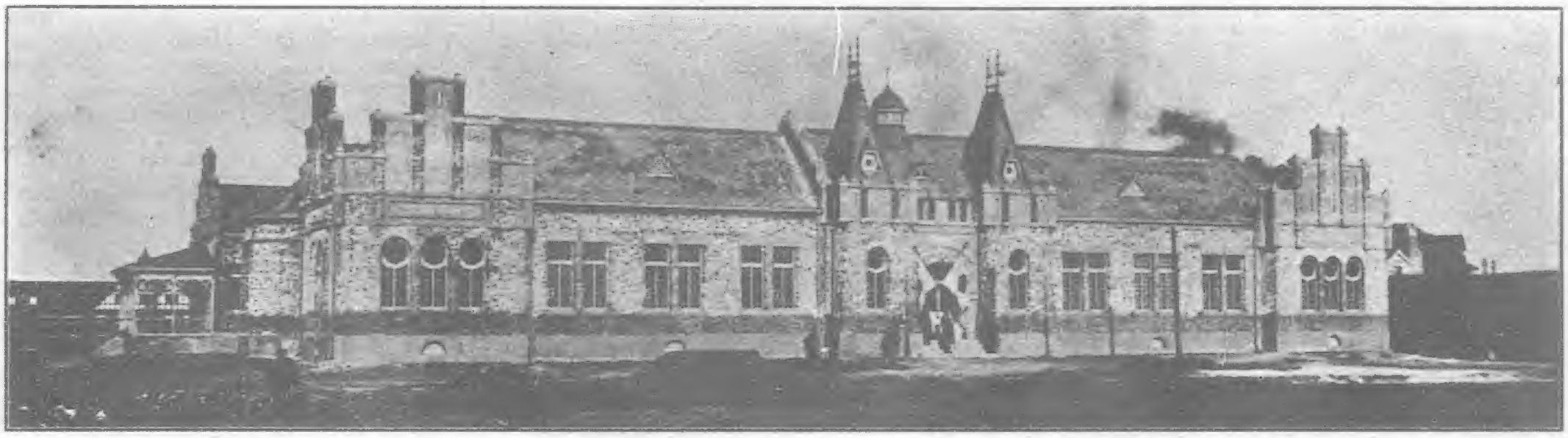
ELECTRIC POWER HOUSE WITH CHIMNEY 150 FEET HIGH, CHIEN-CHIN-CHAI

FUSHUN COAL STATISTICS FOR 1908.

Months.	*Quantities mined.*	*Quantities sold.*	*Quantities consumed*
January	23,374	6,919	12,11
February	17,635	7,082	18,24
March	27,082	13,674	24,09
April	27,802	5,748	21,03
May	31,425	7,623	19,51
June	33,504	10,079	30,40
July	37,048	10,107	36,80
August	34,476	8,847	20,82
September	40,274	14,486	23,42
October	42,806	5,739	18,79
November	44,094	20,075	17,00
December	52,627	19,070	17,22
	437,084	132,482	259,38

The Mining Department of the South Manchuria Railway Co. announces that orders will be filled anywhere along the South Manchuria Railway lines on 2 days' notice at the farthest and that special facilities are provided on the Dairen Wharves for the prompt supply of bunker coal to the vessels whenever required.

Of the building work carried out at Fushun just before the winter may be counted the completion of the General Office for the Colliery besides the official's and workmen's quarters. Equipments for electric light and steam heat were almost perfected. An extensive reservoir



FUSHUN COAL MINES: COLLIERY HOSPITAL AT CHIEN-CHIN-CHAI

can now draw from the River Hun 3 miles away a constant supply of water as good as found anywhere else. The building of a gas-work will be started this year as soon as the machinery and other materials arrive. Other sundry improvements are in project for the Colliery

convenient site than the present temporary one.

As to the mining proper, we are now raising about 1,700 tons a day. The mines that are being worked at present are of a temporary nature and are in future to be superseded by the two pits, named Oyama and Togo, which were planned out with every up-to-date equipment and which, when completed, will be capable of putting out 5,000 tons in all per day.

Each pit is to consist of two shafts, 1,100 feet deep, and the sinking operation is progressing as favorably as could be desired.

FUSHUN COLLIERY: RESERVOIR WITH VALVE CHAMBER. IT DRAWS SUPPLY FROM THE HUN RIVER THREE MILES NORTH-EAST

Town. Again, for the benefit of visitors, a plan has been drawn up for a comfortable European hotel, which is expected to be ready by the end of the year, the ground having been already levelled. Further, before the year closes, a new railway station will be built at a more

COALITE*

Few industrial departures of recent years have aroused more interest, both in economical and scientific circles, than the invention of

* Mining Journal.

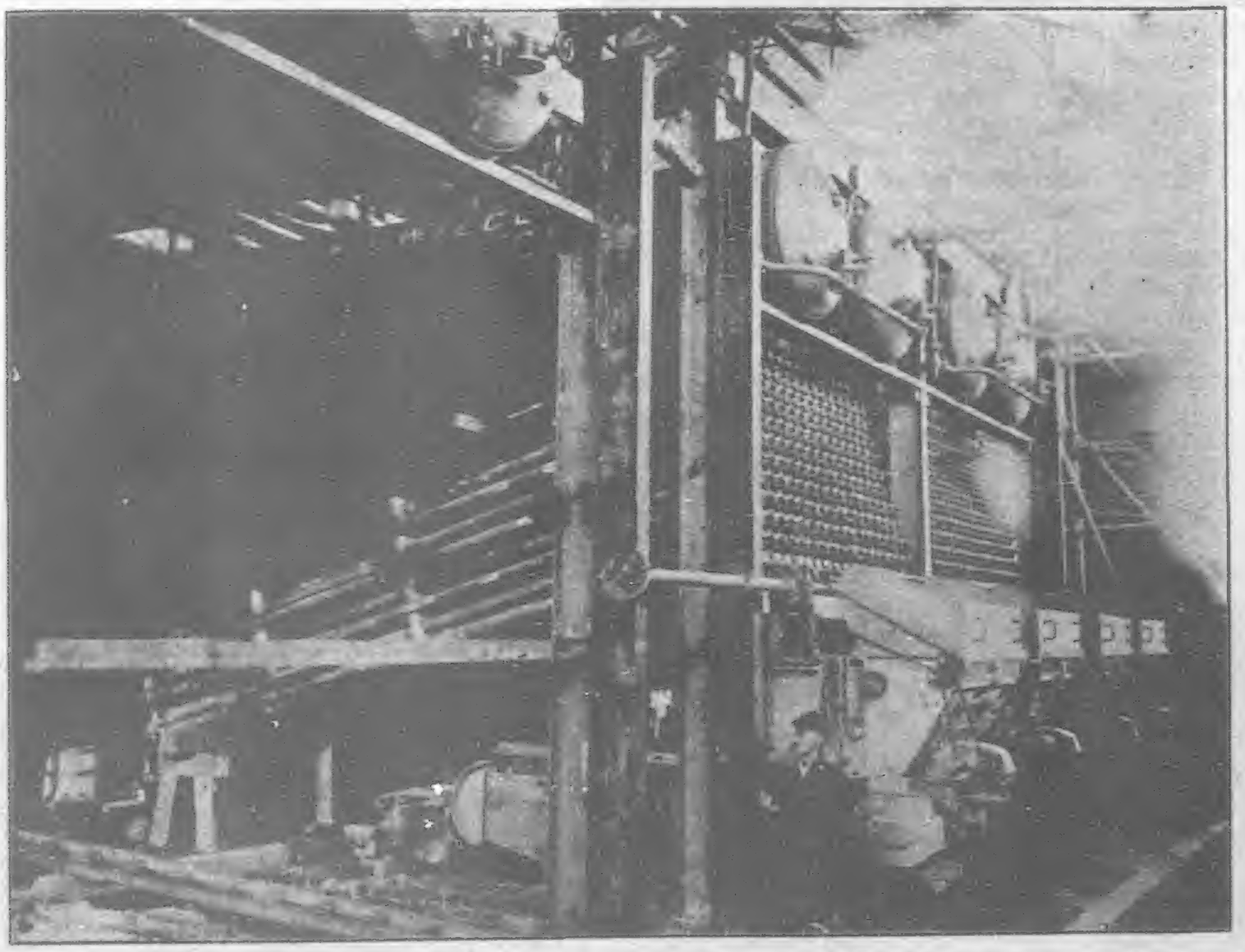
Coalite—a fuel designed at once to remove the smoke nuisance and to annihilate waste by preventing the escape into the atmosphere of smoke and soot—the baneful results of incomplete combustion. During the eighteen months which have elapsed since the original announcement of the discovery was made the position of the enterprise has, we are informed, been progressively strengthened, and the manufacturers have been quietly and busily at work defining the large economies in labor, time, and fuel associated with its production. There has been little stir in the industrial world during this period of preparation, and people who are apt to forget that "Rome was not built in a day," and are ignorant of the fact that the time required for the establishing of new undertakings is in direct proportion to their magnitude, are

FUSHUN COAL MINES: BARRACKS FOR LOCAL GARRISON OF THE RAILWAY GUARDS, WITH GUARD HOUSE IN FOREGROUND, AT CHIE-CHIN-CHANI, FEB., 1908

DR. B. MATSUDA, M. I. M. E.
CHIEF ENGINEER, FUSHUN COLLIERY

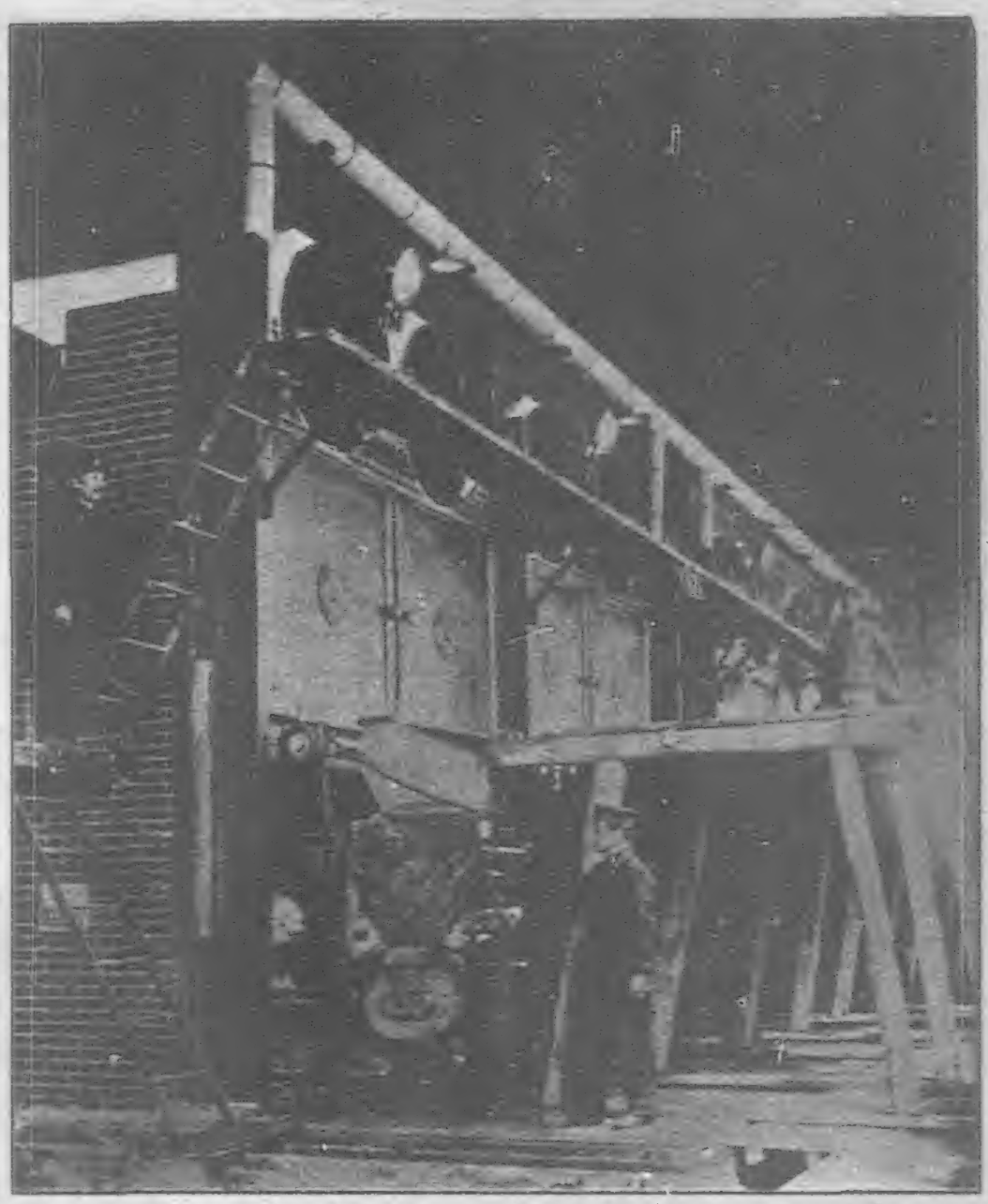
asking why, in view of its manifold advantages, Coalite is not yet in possession of the fuel market.

The fact is that the Coalite enterprise has grown considerably beyond its original limits during its brief career. Sanguine as its influential sponsors were on the eve of its initiation, time and reflection were required in order to determine the full extent of its possibilities.



FUSHUN COAL MINES: INSTALLING BABCOCK AND WILCOX WATER TUBE BOILERS FOR THE ELECTRIC POWER HOUSE AT CHIEN-CHIN-CHAI, (OCT., 1908)

In following up the original discovery, fresh discoveries of a most important character have been made, leading to additional economies, and a method of producing coalite at once cheaper, more consistent, and more fruitful. The time occupied in development of this character is time well spent. To capture the markets of Britain with a new fuel is a stupendous proposal, the ultimate success of which will depend upon adequate measures of preparation. A false start—the creation of a general demand



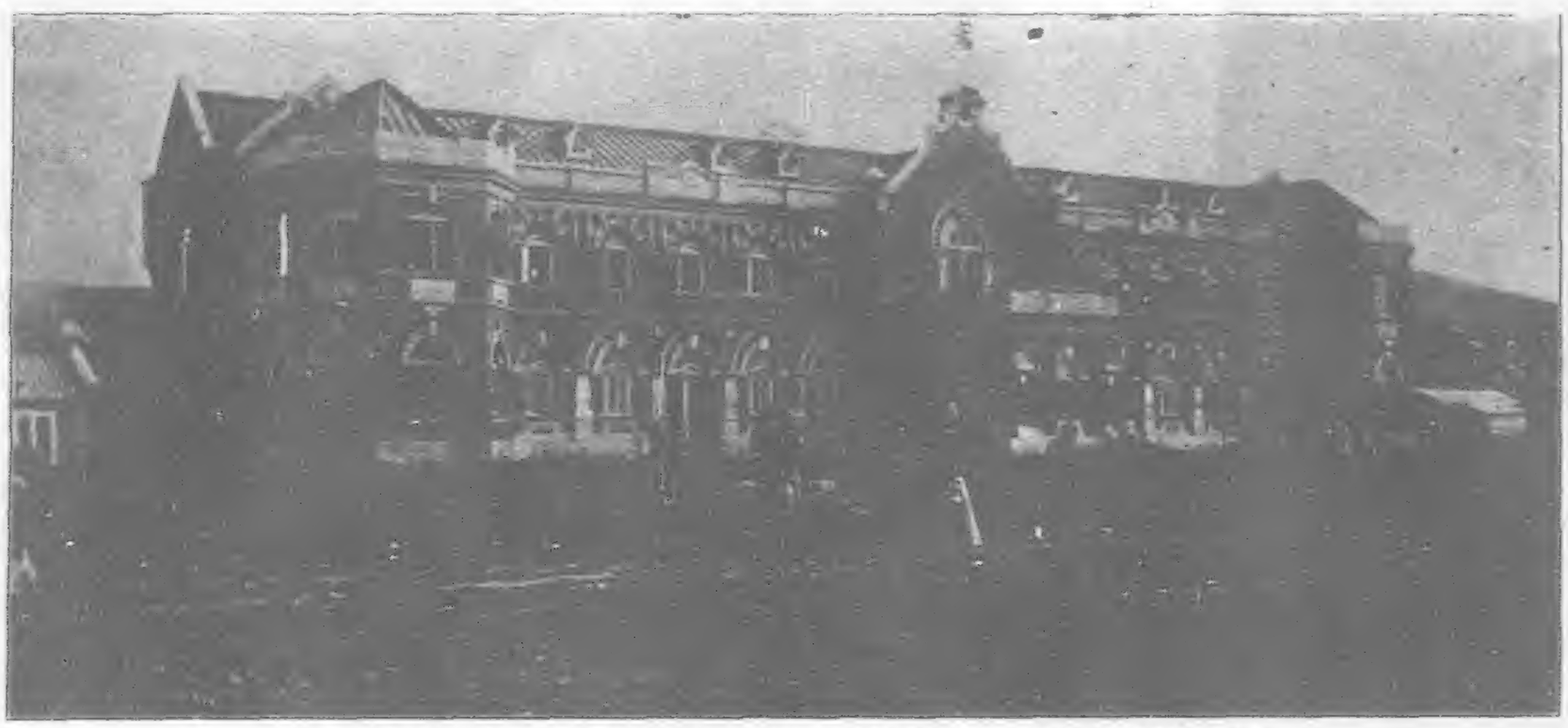
COAL HANDLING MACHINERY AT THE FUSHUN MINES

for Coalite as a result of the recognition of its advantages at a time when the sufficient scale of its manufacture was not assured—in other words, to call into existence a demand outstripping the dimensions of the supply—would spell disaster, or at least a ruinous delay. It is to the assurance of this supply to meet the anticipated demand that the efforts of the directors have hitherto been successfully directed.

The manufacture of Coalite necessitates a form of plant entirely different from that in use in connexion with any other known coal-distilling process. Letters Patent have been granted for the invention not only in the United Kingdom, but in Germany, the United States of America, and all the principal foreign countries and British Colonies throughout the world. Coalite is produced at a relatively gentle temperature in a retort, or still, composed of a group of tall iron tubes, each 6 ins. in diameter, fixed closely together in one block, thus effecting considerable economies of space. These retorts when in use are placed in a vertical position, in contradistinction to the horizontal stills of the gas manufacturer; and the heavy doors, or lids, by which charging is effected are opened and closed mechanically. At Wednesfield, where a unit plant of twenty-four retorts—in all 24 by 12 tubes—can be seen in operation, a daily product of 300,000 cubic feet of gas, and of about 40 tons of coalite is effected in an area of 40 ft. by 20 ft. Owing to the low degree of heat, which is the essence of the process, the strain thrown upon the plant is reduced to a minimum, and thus at the outset of the manufacture space and "wear and tear" represent an enormous saving. The economy in labor is also great, it being estimated that in the work of supervising the retorts eleven men can replace the thirty employed in the treatment of an equivalent amount of material in the work of gas production. The novelty of the process, necessitating a novelty in the

FUSHUN COAL MINES: SUCHIATUN JUNCTION STATION, WHERE THE RAILWAY BRANCHES FROM THE MAIN LINE TO THE MINES

apparatus, has rendered it inexpedient to rely upon the ordinary sources of supply in the matter of plant, and the foundry at Wednesfield is capable of turning out two plants per week, while the company is now engaged upon the construction of a second foundry of equal dimensions. In addition, the Barking works, which will be the centre of the London supply, have already begun operations, and since a large and valuable area of land has been secured there is every facility for a very rapid extension of the works by installing additional units as turned out by the foundry at Wednesfield. A river frontage of about a mile ensures magnificent



GENERAL OFFICE OF THE FUSHUN COLLIERY, CHIEN-CHIN-CHAI

wharfage accommodation, which will simplify on the one hand the disembarkation of supplies of coal from the north, and on the other the distribution by river carriage of the finished product. The supply of Coalite is thus assured, and when it commences to supplant the common fuel its progress will be uninterrupted by any hitch in the smooth operation of supply and demand.

The essential difference which marks out Coalite from other forms of coal distillation is a question of degree in the temperature at which it is produced. Hitherto the object of subjecting coal to treatment by heat has been the manufacture of gas, and since, within certain limits, the greater the temperature the larger the quantity of gas, heat has been forced up to a point which throws a great strain upon the plant at the same time that it seriously diminishes the value of the by-products. Nearly a quarter of a century ago the great chemist Armstrong propounded the fundamental question whether "the gasmaker is right in his present method of heating coal. Would it not be better to deal with it so as to produce a larger proportion of residuals and a different class of coke?" This question has been answered by the Coalite manufacturers emphatically in the affirmative. They say that their method of production is more economical and therefore superior; that it produces a gas of a much higher candle-power and greater calorific equivalent, a fuel that is derfect as regards its burning and heating power and blameless as regards smoke, and tar of so immensely superior a quality that it is quite a different substance—different in its specific gravity and in the valuable oils which are produced from it by processes mainly physical in character. As a commercial article the last-mentioned product is a veritable gold mine. No more fascinating chapter exists in the scientific record than the seeming necromancy by which the chemist has converted this black and turbid liquid into a variety of valuable materials, indispensable to civilized life, and the process by which Coalite is made turns out this by-product in a greater profusion and of a finer quality than any which result (accidentally) from the manufacture of gas.

This brief sketch of an undertaking which has aroused widespread interest and seems now to be at the commencement of its practical career will serve to remind the investing public of its leading features. At the annual meeting, which will shortly be held, it is expected that an interesting statement will be made as to the present position of the undertaking.

PORTLAND CEMENT FOR USE IN THE TROPICS

By Richard K. Meade*

Under the title "Portland Cement Testing," there appeared in "The Philippine Journal of Science," of June, 1908, a paper by W. C. Reibling and L. I. Salinger, of the Chemical Laboratory of the Bureau of Science, Manila, P. I. This paper was abstracted very fully in *Engineering News* of December 3, 1908, p. 612, under the heading, "The Testing of Portland Cement for Use in the Tropics." The conclusions drawn by the authors of this paper are that Portland cement to be used in the tropics, and more particularly in the Philippine Islands, should have a markedly different composition from that used elsewhere.

It seems to the writer unfortunate that this paper should have been so widely circulated or should have come from a government source. The danger of publications issued under the approval of the government is that they will be extensively used by one manufacturer to injure the trade of another and to foster his own interest. In this particular instance we believe that there will be a number of points in the paper on "Portland Cement Testing" which will be very promptly seized upon by the unscrupulous manufacturer to damage the trade of a worthy competitor. The individual government employee at all times has the right to express his opinion, but when he does so over his official position with the government, his utterances assume judicial importance without, as is the case with legal decisions, being subjected to a possible final reversion by a higher court, if found to be in error. That much of the investigating now done by the government is of the highest type of research work and likely to lead to practical results no one will dispute but, at the same time, bulletins and other publications should be carefully reviewed by competent boards or submitted to acknowledged authorities before being allowed to appear as government documents or to be published as "contributed from" government laboratories.

*Chemist, Dexter Portland Cement Co., Nazareth, Pa. in the *Engineering News*, Vol. 61, No. 14.

FUSHUN COLLIERY: MACHINE SHOP, CHIEN-CHIN-CHAI

The authors of this paper on "Portland Cement Testing" are, judged simply by their own production, men of very limited experience with and knowledge of the properties of Portland cement, otherwise they would have stated many of their assertions very much less vigorously and very much more reservedly, and some of them not at all, as trite and covering ground already well gone over. Perhaps the first thing that the chemist who investigates cement finds with experience is that conclusions of a positive nature about this very complex substance are very dangerous things to draw, and, as "one swallow does not make a summer," so one series of experiments can not be used to devise a law for the behavior of Portland cement.

The opening part of this report may be passed over lightly. The discoveries which the authors have made in the first pages are those which any observing embryo cement tester promptly finds out for himself, the effect of the percentage of water used and the influence of temperature upon the rate with which cement hardens, the fact that the lumpy cement will not give as high test as one free from lumps, the effect of aeration upon the setting time of cement, etc., have all been fully investigated by chemists and engineers of every land.

HIGH ALUMINA CEMENTS.—The part of their report which probably will excite most interest and also do most harm is the attempt to show that a special cement is demanded to withstand the climatic influences of the Philippines. The authors have devoted a large part of their paper to a discussion of high alumina cements, and have attempted to prove by a number of experiments, by references to the publications of other cement investigators, the writer included, and by some deductions of their own of a purely theoretical nature, that cement containing more than 7% alumina is unsuited to use in the tropics. As the present writer has had a wide experience with both high and low alumina cement, and also with cements which became quick setting upon storage, his conclusions along this line may be of interest to the readers of *Engineering News*. These conclusions are based, not upon a few experiments made with one or two brands, but upon a large number of experiments made with a number of brands, and also as the result of the examination of the laboratory records of quite a number of Portland cement manufacturers. This information published at this time may also do something to offset the effect of the publication of the paper mentioned.

It is true that alumina influences to a considerable extent the rapidity of the set of Portland cement. It is, however, not the only component which does this. It is also true that fixed limits in an analysis can seldom be adhered to, because it is not so much a case of the actual percentage of essential elements, silica, lime and alumina present as of their relative proportions and the way in which they are combined with each other. For instance, we have seen high silica cements made from sandy clay and limestone which had the properties of low silica cements. The reason for this was simply that a certain part of the silica never combined with the lime at all to form hydraulic compounds, but remained in the cement merely as inert silica. If we deduct this silica, we find that the actual amount of silica which has gone into solution bears about the same ratio to the lime and the alumina as that in some low silica and high alumina cements. Portland cements which contain high percentage of alumina are *apt* to be quick setting or to become so on aeration. This does not necessarily mean, however, that they *will* be quick setting or that they *will* become so, because there are a number of methods which can be adopted to prevent this One of them is having in the cement a higher percentage of lime than would be carried in an ordinary cement. While it is true that the combining proportion of silica is greater than that of alumina it is also true that alumina cements are very much more easily burned, and hence it is possible to carry very much more lime in the cement and still burn it thoroughly. A cement which contains a *very* high percentage of alumina would be very hard to burn uniformly because it would burn at a lower temperature and would stick and ring badly in the kiln. This, however, would not apply to cements of average composition. High alumina cements show very much greater early strength and as high ultimate strength as do high silica cements, and they are more apt to be so und.

The greatest objection that has been raised to the high alumina cements is the fact that they do not show a progressive strength when tested neat, that is, their strength when tested neat after 28 days will be very little if any higher than their strength at 7 days. This is a point, however, which should not be considered as against high alumina cements because it enables the contractor, not only to remove his forms promptly, but also in cold weather to carry out construction work which it would be hard to do properly with a slow-setting cement, owing to the difficulty of keeping the concrete from freezing when used in floors and thin partitions. There seems to be no good reason either why a cement should be expected to show a progressive gain. A railroad company would not consider a steel rail any the better for the fact that it had a low strength when it was put in the track and a high strength 28 days thereafter. They would much prefer it to have a high strength when they laid it. The same reason holds perfectly good for concrete, and as long as the cement does not retrogress there is every reason why the cement which gets its full strength soonest should be the one to have the preference. Strange as it may seem, however, this most common objection to high alumina cements was not raised in the paper of Messrs. Reibling and Salinger, and they confine themselves almost entirely to the effect of high alumina upon the setting time. They even go so far as to state that high alumina cements have one laudable feature in that they are perfectly sound (a good recommendation if true), and that perfect soundness is essential in the Philippines.

Perhaps no property of Portland cement is so changeable or for that matter so hard to test as the setting time. The present writer's experience has been that even a very experienced cement tester, when working with the Gilmore needle, seldom gets pats made up on different days and practically under the same condition to agree in setting time, and this difference sometimes has amounted to as much as from 30 to 60 minutes. This is not altogether caused by any change which has taken place in the setting time of the cement, but rather to the fact that very minute variations in the percentage of water, time of working, and temperature of the air, etc., will often affect the setting time considerably.

It is a well-known fact to those who have worked with cements containing between 6½ and 8½% alumina that these cements when of certain composition will on exposure to air become quick setting. A bin of such cement freshly ground may have a setting time of three or four hours, and after three or four days a sample drawn from this bin itself may show a setting time of only a few minutes. It sometimes happens that another sample drawn a week later will again be slow setting, and still another sample drawn still later will be again quick setting. This changeable set is not altogether due to heat and humidity, although it is much more apt to occur in warm weather than in cold, but it does occur in cement ground in mid-winter if the same has not been properly proportioned.

A large number of engineers are familiar with the term "hydraulic index," as applied to cements. It is not very definite, but usually means the relation between the lime on the one hand and the silica and alumina on the other or expressed as a fraction:

$$\text{Hydraulic Index} = \frac{\%\ \text{Silica} \times \%\ \text{Alumina}}{\%\ \text{Lime}}$$

This formula has to some extent been superseded by that of Newbery and that of Le Chatelier. The writer's experience, however, has been that the old hydraulic index is as near an expression of the proper composition of cement as we can get with our present knowledge of the chemical structure of this complex solid solution. This belief has been strengthened of late years by the work of Messrs. Day and Shepherd of the Carnegie Institute, who have found that the compounds prepared by Newbery and Le Chatelier and used by them as the basis of their formulas are non-existant and that what these experimenters believed to be tri-calcium silicate was nothing more than a solution of lime in orthosilicate. Any formula, therefore, which endeavors to give in mathematical terms the proper composition of cement would probably merely set the percentage of lime dissolved in the magma, as for example, a 15% solution of lime, so that for the purpose of this discussion we can go back to our old "hydraulic index."

While it is true as has been stated that silica combines with a greater proportion of lime than does alumina, it is also true that alumina makes a more fusible clinker and one which will hold in solution a large amount of lime. This is shown by the fact that so far as practical composition goes, the high silica cements contain no more lime than do low silica ones. (See Table I.) Nor it has been the writer's experience with these cements that it was possible in them to carry a higher percentage of lime than was possible with the low silica and high alumina ones.

Returning to our hydraulic index we find certain marked properties go with it. The lower the hydraulic index the more strength the cement will have. On the other hand if a certain limit is passed, the cement will be unsound. This limit depends upon a number of manufacturing conditions, such as the fineness to which the raw materials are ground, the degree of burning, and the amount of seasoning which the cement can be given before its shipment. The highest testing American cements are cements with low hydraulic indexes. The higher the hydraulic index the less strength the cement will have. As the hydraulic index increases we notice with high alumina cements a tendency for them to be quick setting or to become so upon storage. As an example of this, with one of the leading brands on the market, tests of more than 100,000 barrels show that all the slow-setting cement had a hydraulic index below 0.47 and that all cement which either was quick when manufactured or became quick on storage had a hydraulic index above 0.47.

There is another ratio besides the hydraulic index, which affects the properties of cement to a marked degree. This ratio the author has always called the "index of activity" and is the ratio between the silica and the alumina or expressed as a fraction:

$$\frac{\%\ \text{Silica}}{\%\ \text{Alumina}} = \text{Index of Activity.}$$

In most American cements this index is above 2½ and in some cases is as high as 4½. When below 3 there is possibly a tendency for the cement to show the quick setting properties which we have mentioned. At the same time, there are practically very few American cements which rise above 3, and the vast majority of them lie between 2.5 and 2.75, with occasionally here and there one as low as 2.4.

These two indexes do to some extent control the properties of cement, but they are not sufficient alone for even the most experienced cement chemist to predict the properties of a cement.

TABLE I.—ANALYSES OF REPRESENTATIVE AMERICAN CEMENTS.

	Where made	Made from	Silica.	Iron oxide.	Alumina.	Lime.	Magnesia.	Sulphur trioxide.
1	New Jersey	Cement Rock and Limestone.	21.82	2.51	8.03	62.19	2. 7	1.02
2	Pennsylvania		22.20	2.27	6.69	62.61	3.00	1.56
3	Pennsylvania		20.32	2.58	7.30	63.93	2.57	1.27
4	Virginia	Limestone and Clay.	21.31	2.81	6.54	63.01	2.71	1.42
5	Michigan		20.74	2.85	7.17	62.64	1.97	1.42
6	California		25.38	1.20	3.34	62.96	1.20	0.35
7	Mexico		20.16	2.05	6.33	63.27	3.04	1.80
8	Alabama	Marl and Clay.	20.54	3.84	8.55	63.85	0.66	.....
9	Michigan		21.12	3.59	7.55	63.35	0.81	1.56
10	Ohio		21.41	2.15	6.88	62.72	1.44	1.57

Manufacturing conditions will also play an important part in this. The percentage of iron and of magnesia must affect the properties, if in no other way by influencing the combination of one element with the other. Unless magnesia is present as an oxide, it must take the place of a certain amount of lime in combination with silica, unless iron too is present as an oxide, it must take the place of a certain amount of alumina in combination with the lime, etc. There does seem to be this fact, however, fairly well established that there is a certain relation between the "hydraulic index," the "index of activity" and the setting time of cements. With cements having a low index of activity the setting time can usually be increased by lowering the hydraulic index. Cements with a high index of activity can often have a very high hydraulic index and still be slow setting, while a cement with a low index of activity and a high hydraulic index will set rapidly. At the same time at one mill, the chemist may carry his hydraulic index and index of activity at the same figure as his neighbor and yet have trouble with the setting time of his cement which his neighbor never has, due to manufacturing conditions. As an illustration with small experimental kilns burning the same mixture as the large ones the resulting cement is often quick setting from the former and normal from the latter, etc.

In Table II are a few examples showing the relation between the indexes, etc. Nos. 1, 2 and 3 are samples of the same brand of cement. No. 1 became quick setting after seasoning one month in a small paper bag, although it had practically the same index of activity as No. 2 and a much higher index than No. 3. No. 2 and No. 3 both have normal set even after one month's such seasoning. No. 1 has a high hydraulic index, Nos. 2 and 3 have low hydraulic indexes. Similarity No. 4 and No. 5 are average samples of two lots of several thousand barrels of cement from different works. No. 4 had a normal set after a month's seasoning, No. 5 became quick setting in this time. No. 5 has less alumina and more silica than No. 4, but the latter has a much lower hydraulic index, which explains the difference in behavior. No. 6 has more alumina than any cement in the table. Its index of activity, however, is high and the small percentage of iron no doubt permits of the high hydraulic index. At the end of a month it still had a normal setting time. No. 7 is a- example of a low alumina cement which became quick setting on seasoning, while No. 8 did not do so. Again it is probably a case of hydraulic index. No. 9 has the same hydraulic index as No. 10, and is from the same mill. No. 9 became quick setting after a few weeks seasoning, while several months' storage in a small paper bag in the laboratory had no effect upon No. 10. No. 9 was made from coarsely ground raw material and was unsound when fresh but seasoned sound. Considerable (3.60%) silica separated out on solution in acid, showing free silica in the cement. If we deduct this silica from the total and calculate the ratio between the remainder and the alumina we find an index of activity of only 2.35. The above show the difficulty of predicting, from the percentage of alumina only, just what properties a cement will have.

TABLE II.—ANALYSES OF QUICK AND SLOW SETTING CEMENTS.

No.	Silica.	Alumina.	Index of Activity.	Iron Oxide.	Lime.	Hydraulic Index.	Magnesia.	Sulphur trioxide.
1*	20.76	8.12	2.56	2.20	60.66	0.48	3.10	1.55
2	20.30	7.80	2.60	2.18	62.99	0.45	3.16	1.55
3	19.92	8.32	2.40	2.22	63.41	0.45	2.70	1.40
4	19.52	7.50	2.60	2.80	62.31	0.43	3.05	1.61
5*	22.02	7.44	2.96	2.28	61.71	0.48	2.88	1.56
6	23.18	8.44	2.75	1.02	63.66	0.50	1.40	1.52
7*	24.12	5.44	4.43	3.22	60.50	0.49	2.46	1.84
8	22.90	5.24	4.37	3.14	62.74	0.45	2.58	1.65
9*	19.92	6.94	2.87	3.48	61.72	0.43	3.44	1.68
10	20.18	7.22	2.80	3.35	61.27	0.45	3.36	1.62

Returning now to the paper by Messrs. Reibling and Salinger, we find that only one of the cements which became quick setting contained sufficient sulphur trioxide (SO_3), or as it is commonly called, sulphuric acid. Probably the first comment which an experienced cement chemist, or even one familiar with the usual composition of Portland cement, would make upon seeing the analyses given in Table VII of their paper and also those in Table XXVI (see Table III of the present article) would be that the cement had not had added to it enough gypsum or plaster of paris. It is hardly necessary here to do more than call attention to the fact that Portland cement clinker if ground fresh from the rotary kiln without any addition whatever would set too quickly for ordinary use. It has, therefore, been found necessary to add to this plaster of paris in order to delay the set of the cement sufficiently to allow of its being properly worked. Practically all American cements and most of the foreign ones contain between 1 and 1.75% sulphur trioxide. Of the cements whose analyses are given by Messrs. Reibling and Salinger only one, No. 5, contained sufficient sulphuric acid, and this cement did not become quick setting until after it had been exposed to the air for "such a very long time" that it had united with 6.36% water and carbon dioxide.

TABLE III.—ANALYSES OF CEMENTS TESTED BY MESSRS. REIBLING AND SALINGER. (Table XXVI of their paper.)

No.	Silica.	Iron Ox.	Alumina.	Lime.	Magnesia.	Sulphur trioxide.	Loss on ignition.	Hydraulic index.	Index of Activity.
1	20.65	3.07	8.57	61.83	2.26	0.51	2.47	0.47	2.41
2	20.70	3.01	8.42	61.60	1.94	0.59	2.76	0.47	2.42
3	22.00	3.0	8.9	59.9	1.55	.....	5.3	0.52	2.48
4	20.52	2.65	8.71	61.30	1.96	0.46	4.33	0.48	2.36
5	21.28	2.29	6.95	61.08	0.21	1.17	6.36	0.46	3.06

Studying the analyses (see Table III) also in the light of the information given above as to the effect of the index of activity and hydraulic index upon the properties of cement we see that these cements, with one exception, have fairly high hydraulic indexes for high alumina cements, and that the only one of them which has a low hydraulic index, is the cement (No. 5) above referred to, so that it really narrows down to the point that of all the cements upon which they based their conclusions as to alumina it is possible that only one was of normal composition. The other four cements whose analyses are given do not contain sufficient sulphuric acid to give them the proper setting time under any and all conditions, and also a lower hydraulic index would improve, unquestionably, this setting time after seasoning.

The error made by these chemists in attempting to draw conclusions relative to composition from such a series of experiments is shown more conclusively to the engineer perhaps by Tables IV and V, herewith shown. The first is taken from the author's note-book and shows the analysis of five recognized leading brands of Portland cement from the Lehigh district. The second table is taken from the mineral resources of the United States for 1904, and gives the characteristic analysis of American Portland cements. The five analyses given in Table IV are all those of cements which have a reputation among engineers and architects for their uniformity of set, strength, and general good properties. It will be seen that not one of them will pass the specifications for chemical composition drawn up by Messrs. Reibling and Salinger. The brand of cement of which No. 5 is a representative analysis never contains less than 7% alumina. From 20,000 to 50,000 bbls. of this brand are shipped every year to Central and South America, to Cuba, Porto Rico, and Mexico. Of all this quantity of cement, we know of not one instance where a complaint was made that the cement set other than normally. Practically all of these cements, in fact, have been exported largely. Cement No. 3, of which the analysis is probably slightly higher in alumina than it will generally show, is used almost exclusively for sidewalks and ornamental concrete work, and its popularity along this line lies almost entirely in the fact that its setting qualities are very uniform, even in hot humid summer weather.

TABLE IV.—ANALYSES OF LEHIGH VALLEY CEMENTS.

No.	Silica.	Iron Ox.	Alumina.	Lime.	Magnesia.	Sulphur trioxide.
1	19.52	2.80	7.50	26.31	3.05	1.61
2	21.82	2.51	8.03	62.19	2.71	1.02
3	20.76	2.20	8.12	62.80	3.06	1.55
4	20.32	2.18	7.80	62.99	3.16	1.45
5	20.02	2.28	7.64	62.31	2.88	1.56
6	21.14	2.14	7.10	62.64	1.97	1.42

It will be seen from Table V that the average alumina in American Portland cements is about 7½ per cent. The average setting time reported by the St. Louis laboratory upon all this cement was 145 minutes (or 2¼ hours), and strange to say the slowest setting time, 260 minutes (or 4½ hours) was obtained on the limestone and blast furnace slag cement, containing 8¼% alumina. The conditions of use were such that if the cement had developed quick setting properties, this latter would have been detected.

TABLE V.—AVERAGE CHARACTERISTIC ANALYSES OF AMERICAN PORTLAND CEMENTS

Made from.	Silica.	Iron Ox.	Alumina.	Lime.	Magnesia.	Sulphur trioxide.
Limestone and cement rock.....	22.07	2.50	7.51	62.82	2.58	1.51
Limestone and clay or shale.....	22.18	3.49	7.31	62.80	1.62	1.39
Limestone and slag.	23.62	2.71	8.21	61.92	1.78	1.62
Marl and clay or shale.....	22.36	2.68	6.93	63.37	1.99	1.31
Average.....	22.56	2.85	7.49	62.73	1.99	1.46

Table VI shows the analysis of six foreign brands which have been shipped to almost all parts of the world, and all climates. The first two German cements are famous export brands and we have never heard of their becoming quick setting in the tropics; in fact, one of the strongest claims made for these German cements is their uniformity and regularity of setting time.

The paper in question tells us among other things that the difference between the local climate of Manila and that of temperate climates exerts very little influence upon the usual standard tests themselves. It is, therefore, very safe to estimate that cement which gives proper tests in this country will also give proper tests in the tropics. We are also told that in general the temperature is conducive to slightly better results, that the soundness tests are benefited "as the cement does not suffer as great a change in temperature, and hence expansion and warping is not so much marked." Considering the fact that the maximum temperature in the Philippines is hardly more than 100° F., while the temperature of boiling water is 212° and the temperature in this country on a warm day is sometimes 93° and 94°, the present writer is somewhat skeptical of this beneficial effect. We are also told that "climatic conditions improve the characteristics of early tensile strength of most cements, as the variation in temperature from day to day and from hour to hour is only slight, the temperature of the water bath is higher than in cold climates, and the temperature during gaging is also higher." This we can readily understand and believe would be conducive to good early tensile strength tests. We are also told that the relatively higher temperature of this climate will seriously affect the setting qualities of some cements. This, of course, is nothing more than has been observed in this country that cement tested in the warm laboratory very often sets rapidly and yet can be used for work in early fall without showing any inconvenient properties along this line. The authors, however, tell us that Portland cement is most affected by local climatic conditions *before* and not *after* it is gaged,

high temperature and the alternating humid dry atmosphere are conditions under which hydration and carbonization are accelerated. In consequence the majority of commercial products must be especially prepared to withstand tropical climates. Portland cement is very susceptible to changes under these conditions, and it is therefore essential to the best practice that cement for use in the tropics should develop no dangerous properties by the absorption of water and carbonic acid in normal quantities. The cement problem of tropical countries depends for its solution upon the characteristics of Portand cement; and our efforts have been to determine what class of cements are most affected by exposure and seasoning.

*These cements became quick setting on seasoning in the laboratory one month or less.

Unfortunately the authors did not carry out this program but endeavored to determine from tests made of one brand of cement; or certainly of one class of cements, since all of their analyses show very much the same characteristics, what cement was best suited to tropical conditions. We must confess that we can hardly see how cement can absorb any more water because of an alternately dry and humid atmosphere than it will in a humid one. Messrs. Reibling and Salinger's own analyses do not indicate that this is the case. Let us take their cement No. 8. This they divided into two samples, one of which they placed in a tin can and one

TABLE VI.—ANALYSES OF "EXPORT" BRANDS OF FOREIGN CEMENTS.

Brand.	Silica.	Iron Ox.	Alumina.	Lime.	Magnesia.	Sulphur trioxide.
Alsen, German	20.48	3.88	7.28	64.03	1.76	2.46
Dyckerhoff, German	20.64	3.69	7.15	63.06	2.33	1.39
Lagerdorfer, German	23.55	2.40	7.47	61.99	1.42	1.07
Josson, Belgian	22.92	2.46	7.98	63.39	trace	1.28
Candlot, France	22.30	3.50	8.50	62.80	0.45	0.70
K. B. & S.	19.75	5.01	7.48	61.39	1.28	0.96

in a paper bag. The sample in the tin can of course absorbed practically no water and carbon dioxide, that in the bag took up some and became quick setting. The difference between the two amounted to 0.92%. Samples of cement exposed in paper bags in the present writer's laboratory, for various lengths of time absorbed water and carbon dioxide as follows:

Fresh.....total 1.86
After 7 days, increase 1.10%, total 2.96
After 14 days, increase 1.42%, total 3.28
After 21 days, increase 1.72%, total 3.58

This is much more in seven days than Messrs. Reibling and Salinger's cement had absorbed after eleven days. When fresh from the mills it had a setting time of 2 hours and 5 minutes, and at the end of 21 days of 1 hour and 45 minutes. This is about the normal rate of absorption in this section of the United States (Eastern Pennsylvania) for the fall of the year and for Lehigh Valley cements. Finely ground cements will absorb more water than coarsely ground ones, and more water will be absorbed in warm than in cold weather. Analyses of their sample No. 8 and of the Lehigh valley cement above referred to are given below:

	R. & S. No. 8.	Lehigh Valley.
Silica	19.80	20.06
Alumina	8.33	7.32
Iron oxide	2.75	2.20
Lime	62.44	61.20
Magnesia	2.25	3.09
Moisture	0.32	0.40
Loss on ignition	3.14	3.18
Sulphuric acid	0.43	1.49
Hydraulic Index	0.45	0.45
Index of activity	2.38	2.74

As the hydraulic index of the first of these cements is low (0.45) it seems probable that if it had contained as much sulphur trioxide as the second its setting properties would be all that could be desired and it also seems probable that an addition of sufficient plaster of paris to the sample to bring the percentage of sulphuric acid up to that of the Lehigh Valley cement would also slow its set and permit of its being used.

It may also be of interest to note here that those cements which set rapidly may often have their set slowed by the addition of quick lime to the water used to gage the cement or else hydrated lime to the cement itself. When cement becomes quick setting from exposure to the atmosphere it would therefore seem to be a much better practice to slow the set of the material by addition of a little hydrated lime to the cement or by dropping a few lumps of lime in the barrel of water used for gaging rather than to condemn the cement.

AERATION.—This brings us to another point. Has any one a right to set a small sample in the warm and usually moist air of a laboratory and because the sample after such storage for a month becomes quick setting condemn a carload of cement in a warehouse as likely to develop dangerous properties? If cement will aerate enough in a day to develop quick setting properties, it probably would be cause for grave concern. If the sample takes a week or more it is certainly safe to assume that the main body of the cement will not develop any such properties unless kept for a very long period. The surface exposure of a sample of cement in a small paper bag is so enormously out of proportion to that of cement in cloth bags piled in a warehouse, that the two hardly have any relation to each other. For instance, it frequently happens that a sample of unsound cement left in the laboratory a few days will pass the boiling test, while the stock from which it is drawn may lay in the warehouse for as many months before a new sample freshly tested will do so.

Laboratory tests of material after all have considerable limitation, to which the engineer and chemical engineer who have put in practice the result of such "research work" can usually testify most strongly. The only laboratory research work which is likely to prove of value is that in which *laboratory* and *working conditions* are kept very close together. If the engineer desires to investigate the relation between the setting time of a cement and its aeration, let him keep a 95-lb. bag of cement and draw samples from all parts of this bag (not simply from the top surface) and mix them.

CHEMICAL ANALYSES.—At the present time one of the most serious drawbacks to chemical specifications for cement is the question of the accuracy of chemical analyses. Recently three of the most prominent chemists in the country were asked to report upon some thirty samples of cement. These men are all of them experts in cement analysis, yet the average alumina determinations of the three upon the 30 samples were as follows:

$A = 6.88\%$.
$B = 7.56\%$.
$C = 8.56\%$.

The samples according to A will pass Messrs. Reibling and Salinger's specifications, while according to B they contain $\frac{1}{2}\%$ and according to C $1\frac{1}{2}\%$ more alumina than is permitted. Let us suppose that A, B, and C were the chemists of three cement manufacturers. A would send his cement to the Philippine Islands and believe it to be all right, B and C might be deterred by Messrs. Reibling and Salinger's investigation from doing so. Let us also suppose A, B and C were chemists at Manila, and that specifications limiting alumina to 7% were adopted, then A would accept the cement and B and C would not, etc.

SPECIFIC GRAVITY AND UNDER-BURNING.—The authors of this bulletin also recommend that the specific gravity tests be taken as an indication of under-burning. This seems to be a step backward. The American Society for Testing Materials so far recognized the fact that this test was valueless for this purpose that they struck this clause ("or under-burning") out of their specifications. The authors seem to think that under-burning and excess of lime are the sole causes of the failure of cement to pass the soundness test, whereas, as a matter of fact, probably 90% of the cement which fails on this test fails because the raw materials have not been finely enough ground. For instance, they state that "unsoundness in conjunction with low specific gravity proves that under-burning alone is the cause of the warping and disintegrating." As a matter of fact, unsoundness and low specific gravity would be much more apt to indicate coarse ground raw materials. An underburned cement would season much more rapidly than one unsound because the raw materials had been coarsely ground, and hence the chances are that, while under-burned cement might show low specific gravity, it would be sound, whereas a cement which had been very well burned but which had been made from coarse raw materials might take up just as much water if given a longer time, have its specific gravity reduced to the same point, and be unsound.

It is rather amusing to the cement manufacturer to hear this "under-burning" and "over burning" question discussed. The present writer is willing to confess that he has never seen an over-burned Portland cement from a rotary kiln, and that some samples which were fused to a viscous glass in the electric furnace still had excellent hydraulic properties. He is inclined to think that the rate of cooling, etc., would have a great deal more to do with the properties of cement than the temperature at which it was burned, provided this temperature had been carried sufficiently high to bring the lime into solution.

The question of specific gravity seems to be one which could be waived in the Philippine Islands very much better than almost anywhere else. The cement has withstood a long sea voyage, and it is probable that it had been lying in the stock house of the manufacturer for at least sufficient time to be tested, since no careful and reputable manufacturer would care to send cement this distance about which he was not perfectly sure. It would therefore seem that low specific gravity in cement which had been exported to the Philippines and tested there would be absolutely valueless as indicating anything While it is probably perfectly true that the under-burned cement would absorb moisture faster than a well burned one, it is also equally true that a well burned cement does not have to be so very old to take up sufficient water to put itself below the requirements of the American specifications, and it is also true that in the time it takes a shipment or consignment of cement to go from this country to the Philippines, the cargo might very readily absorb enough moisture to lower its specific gravity below specifications.

The authors of the bulletin also err in their statement that all under-burned cements usually show a low specific gravity because of the carbonic acid (or carbon dioxide) which remains from imperfect burning of the raw material. Cement clinker which shows barely any indication of clinkering, and which is hardly anything more than a yellow ball which can be crushed between the fingers sometimes proves to contain as low as $\frac{1}{4}\%$ of carbon dioxide. The carbon dioxide which is contained in ordinary cement is almost all of it absorbed during the grinding. In fact it is almost an impossibility to grind a sample under even laboratory conditions which does not take up some of these constituents from the air.

While it is perfectly true that a sample cannot take up moisture beyond a certain percentage without having some of its active compounds saturated thereby, it is also true that one cement might have a considerable percentage of its active compounds saturated and still be better than another cement. For instance, a cement containing 63% lime might have 4 or 5% of this lime saturated and still contain more active cementing matter than one with a very much higher hydraulic index which contained say 60% lime. So it is not, strictly speaking, proper to say that because a cement has taken up 3% moisture it should be rejected because its good properties have been impaired. While it is possibly true that some active compounds are destroyed it is also equally true that if the cement under this condition passes satisfactorily the average requirements the consumer is getting all that he has expected, or generally paid for. It is also true that in almost every case the compounds first hydrated or carbonated are those which cause unsoundness. It is also true that only that portion of the lime which is carbonated is destroyed, as hydrated lime is by no means an inert compound but has good effect upon hydraulic cements and may be made to replace cement in mortars, often to positive advantage and particularly to improve troweling properties

To sum up, if the Philippine engineers want good Portland cement, or at least an open market to all good cements, they will let the manufacturer decide on the composition of the product (his chemist is usually very much better posted on the effect of composition and aeration on the setting properties of his brand than is an outsider), and confine his energies to securing a finely ground cement, of good strength, and perfectly sound. Owing to the long voyage and delays in transit from this country to the Philippines, low specific gravity found in cements after arrival there is more likely to be due to aeration than to any other cause. It is seldom due to under-burning, and when it is the latter will be shown by the cement being unsound or, if seasoned sound, by low tensile strength. Reputable manufacturers do not adulterate cement, and the irresponsible ones know how to get around the specific gravity requirements.

HON. FRANK A. BRANAGAN,
RECENTLY APPOINTED MEMBER OF THE PHILIPPINE COMMISSION

Mr. Frank A. Branagan is another young man whose advancement to the important position of member of the Philippine Commission was the reward of merit alone. Strange as it may seem to those familiar with the importunities of political workers in the United States, here is a young man, 49 years of age, who arrived March 4th, without any political influence to mark him for special favor. He carved out his own career and was fortunately benefited only by the policy of the administration in regard to its attitude to the Philippine Service. Mr. Branagan was born in the town of Steubenville, Ohio, April 5th, 1858. He attended the Georgetown University, Washington, and during the two years previous to his graduation in 1888, he worked in the Treasury Department at Washington and thus paid his expenses. After graduating in law he accepted the appointment as chief of the bureau of appointments and disbursements in the Department of Justice, and in 1895 he was promoted to the position of chief of the bureau of accounts in the Department of State. In 1898, on account of his marked ability, he was selected to accompany the American peace commissioners to Paris as Fiscal Attaché. His services were so highly satisfactory that when Mr. Taft was looking for men to accompany him with his commission to the Philippines, he chose Mr. Branagan for his disbursing officer. This was in 1900. The following year, when the civil government assumed charge of the islands, Mr. Branagan was appointed Treasurer. He organized and administered the Bureau from that date until his recent elevation and during that time he has proved his worth to the government. He is a modest gentleman, unassuming, yet always alive to the interests of the Philippines. His promotion has been universally approved.

MR. WILLIAM H. CLARKE, INSULAR AUDITOR, PHILIPPINE ISLANDS

President Taft, while Governor of the Philippines, was a devout believer in the Civil Service System and supported the requirements of that bureau under the direction of Dr. Washburn in and out of season. The recent promotion of Deputy Auditor William H. Clarke to be Auditor is in line with the President's policy as expressed many times while in the Islands. And the reward that has come to Mr. Clarke has been well earned by years of constructive service in perfecting the organization that he now directs. It may now be said that the Bureau of Audits is one of the most thoroughly systematized departments of the insular government. It has taken years to bring it to its present efficiency, and to Acting Governor-General Forbes, who recommended the reorganization of the Bureau in 1904, and to Mr. Clarke, who has since that time devoted his entire time to this work, is due the credit, and at the present time under his direction the Insular Government may be said to have the benefit of the application of the most modern, expeditious, successful, commercial and corporate methods to the auditing of public accounts.

Mr. Clarke belongs to an old Scotch-Irish American family. His great-great grandfather served in the revolutionary army as captain of a company of Pennsylvania militia and gained distinction during the revolution. The Clarkes were a family of bankers.

William H. Clarke comes naturally by his talent for accounts. His grandfather was president of the Lawrence County National Bank, at Newcastle, Penn., and his father Mr. A. L. Clarke, the president of the First National Bank of Hastings, Nebraska. He was brought up in a banking atmosphere. Mr. Clarke was born in Alleghany, Penn., in 1862. He attended the Alleghany College and chose engineering as his profession. During his vacations he worked in the counting room of his father's bank. After leaving college in 1882, he accepted a position as assistant bookkeeper in the First National Bank of Omaha, Nebraska, passing through the different positions of bookkeeper, teller, etc., to discount clerk. In 1886 he married Miss Gertrude Tonzalin, daughter of a prominent official of the Rock Island Railway. About this time he entered the employ of the Omaha & Grant Smelting Company and later with the Mexico Central Railway. In 1900, Assistant Secretary of War Meiklejohn, who was looking for young men having knowledge of accounts and some familiarity with the Spanish language, offered Mr. Clarke a position in the Bureau of Insular Affairs at Washington, and from there he came to the Philippines to be chief clerk of the Bureau of Audits, in the "Days of Empire." Since that time he has been continually associated with the history of the bureau. In March 1907 he was promoted to the position of Deputy Auditor and from July 27th, 1907, to April 17th, 1909, he was in charge of the Bureau as Acting Auditor. It was on the latter date that his appointment was confirmed.

PROMINENT AMERICAN ENGINEER VISITS THE FAR EAST

Mr. C. Griffith Young, who has been connected for over 16 years with the well-known firm of Messrs. J. G White & Company of New York, arrived in the Philippine Islands last month and will complete a tour of the Far East looking up the engineering situation and at the same time carry out several large commissions with which he is entrusted. Mr. Young recently severed his connection with Messrs. J. G. White and Company and opened an office at 60 Wall Street, New York City. He is an engineer of world wide reputation and will be given a welcome by the engineering profession of the

Orient. Mr. Young has directed the construction of more electric lines possibly than any other engineer living, and there is no branch of engineering construction in which he has not made a remarkable success. The *Electrical World* has the following to say about this successful captain of industry:

"Mr. C. G. Young, who has been so intimately connected with the J. G. White interests for the past 16 years, is opening offices for himself, at 60 Wall Street, New York, N. Y., for engineering examinations, estimates, reports, etc. Having important work of this kind to do in the Far East, he is sailing early in February for Japan, and, after visiting other countries, will return in August and take up a regular practice. His address until departure will be 43 Exchange Place, New York, N. Y. From 1888 until 1892 he was general superintendent of the Mount Morris Electric Lighting Company in New York. In 1892 he began his connection with White-Crosby and J. G. White as construction superintendent, and in 1900 he went with J. G. White & Company, Ltd., of London, doing special expert work all over the world for it. Returning to this country, since 1902 he has been successively general superintendent of construction and construction manager for the American White corporations in a great many cities in this country, as well as in the Philippines, Australia, Holland, Argentine Republic, Ceylon, Cuba, Canada, Uruguay, Brazil, Porto Rico, China, Chili, New Zealand and Japan. Mr. Young is a member of the American Institute of Electrical Engineers, associate member American Society of Civil Engineers, member of the New York Railroad Club, the New York Electrical Society, the National Electric Light Association and the Engineers' Club."

While in Japan, Mr. Young was engaged by the well-known firm of Messrs. S. Ida & Co. (Tickashimay) to represent them in the United States as consulting and purchasing engineer. The Ida firm is purveyor for the government and owns extensive plants throughout the country.

MR. JOHN L. BARRETT,
TREASURER OF THE PHILIPPINE ISLANDS.

Mr. John L. Barrett, who was promoted, April 18, 1909, to succeed to the Treasurership of the Philippines, was born in Minneapolis, Min., in 1876, and is one of the youngest Americans in charge of a bureau of the Insular Government. In 1896 he joined the office staff of the International Harvesting Company in his native town, and when the Spanish War broke out in 1898, the attraction of a promising career with that influential organization did not deter him from offering his services to his country and he came to the islands with the 13th Minnesota Volunteer Infantry, making the sacrifice cheerfully and without promise of reward. After the fall of Manila, the military authorities required the services of a number of young men familiar with the counting room for the treasury department, and among those assigned to duty was Mr. Barrett. His orders was dated October 1st, 1908. From that day until the present he has been continually associated with the history of the Bureau under Military and Civil control. In 1903 Mr. Barrett was appointed Assistant Treasurer and for a period of over one and one-half years he served as Acting Treasurer during the absences of his chief. The result is that the new treasurer is fully equipped by experience and familiarity with the duties that now devolve upon him, that his advancement is most desirable in every respect.

The position is worth $6,000 a year, a very small compensation when the importance of the office is considered. It is estimated that over ₱500,000,000 passes through the Insular Treasury annually, and besides the responsibility for the Insular funds, the treasurer is the custodian of the huge United States account and many trust funds. He is also manager of the Agricultural Bank with a capital of ₱1,000,000 and a member of the investing board of the Post Office Savings Bank which has on deposit over ₱1,500,000. Besides the Bureau is in the banking business and every year handles over ₱30,000,000 in foreign exchange. Then there is the responsibility for the banks of the Philippines. The treasurer has absolute control over the inspection of all these institutions and he is also responsible for the proper investment of trust funds reaching up into the millions.

Mr. Barrett is in his 33rd year. His advancement to his present responsible post has been earned by steady application, and it must be recognized as evidence that the Philippine service has its attractions for the young American. This is especially true since this promotion is but the natural result of the strict application of the civil service policy of the Taft administration. And Mr. Barrett's experience would indicate that in making his early sacrifice on the altar of patriotism, without hope of preferment, he came into his own where he least expected it.

THE OUTLINE OF THE FURUKAWA MINING CO.

The Furukawa Mining Co. that supplies the market, both at home and abroad, with wire, copper, silver, coke and coal was originally established by the late Mr. Furukawa Ichibei in the 8th year of Meiji, and at the death of Mr. Furukawa in the 36th year of Meiji, the whole concern was managed by Mr. Furukawa Junkichi, but in April of the 38th year, with a view to consolidate the business, it was turned into a business corporation with Furukawa Junkichi, Furukawa Toranosuke, Kimura Choshichi and Hara Kei as members, while Mr. Hara acted as the representative of the five. At the death of Mr. Furukawa Junkichi in the 40th year, Mr. Furukawa Toranosuke was made president when Mr. Hara was appointed Minister of Home Affairs, Baron Nakajima joined the staff, and ever since the business of the company is making steady progress, and at present is one of the most powerful companies:—

1. Locality of the Company.—There are several branches throughout Japan.

1. The Headquarters.—
No. 1, Yaesucho, Kojimachi, Tokyo.
2. Moji branch.—Sanbashi-dori, Moji.
3. Wakamatsu agency.—
Wakamatsu-cho Fukuoka-ken.
4. Osaka branch.—
No. 5, Horidori, Nishi-ku, Osaka.
5. Akiha-hara goods agency.—
Akihagahara, Kanda, Tokyo.
6. Ashio mining office.—Ashio, Tochigi.
7. In-nai mining office.—In-nai, Akita.
8. Ani mining.—Aniai machi, Akita.
Furo-kura mining office.—Ofu-mura, Akita.
Nagamatsu mining office.—Shirayama-mura Yamagata.
Mizusowa mining office.—Inazaki-mura, Iwate
Kusakura mining office.—Kase-mura, Nügate-ken.
Kune mining office.—Sakuma, Shizuoka-ken.
Saibe mining office.—Katsunomura, Fukuoka-ken.
Shino-nome refinery.—Shino-nome, Akita-ken
Honjo Yodo refinery.—Yanagihara, Honjo.
Fukagawa works.—Suna-mura, Tokyo.

The business connections with these different places are something quite striking.

2. Line of business.—The wholesale transactions form the principal items of business, but retailing is also carried on. The particulars are given in the following table:

(A) Copper.—The copper of this company enjoys the reputation of being the 1st class of the kind in the east. There are six different kinds of copper.

1. Bessemer copper.
2. Round-shaped copper.
3. T-shaped copper.
4. Small T-shaped copper.
5. Electric copper rod.

The output of copper by the company reaches over 20,000,000 *kin* per year, the greater part of which is exported abroad, and the delivery has always been satisfactorily made.

1. Bessemer copper.—3½ inches on the above part, 4.6 inches at the bottom, and 2.3 inches thick, and weight is some 50 *kin*. The output in the Ashio copper mine reaches over 12,000,000 *kin* per annum. It is chiefly used for casting works, T-shaped copper made amounts to some 10,000,000 *kin* a year. It is intended for wire. The output or T-shaped copper is about 1,700,000 *kin* a year while the exact figures concerning the output of T-shaped copper are not obtainable because it is made in order. Electric plates rod, and wire are made in order. Such brands as B.W.G., S.W.G., B.S. are also obtainable. Besides the company can make trolly and other varieties of wires some of which actually extends over 1 mile.

Silver is obtained from the In-nai silver mine, and the output amounts to some 4,000 *kwamme* a year. Its fineness ranges from 92% to 98 per cent. Coke is produced by the company's mine to the extent of over 20,000 *tons*. The following is the result of the analysis of the company's product:—

	Coke	*Ashes*	*Sulphur*
No. 1.....	83	12	1
No. 2.....	80	15	uncertain
3rd.....	75	uncertain	uncertain
Special make.....	88	10	1

Coal is obtained in the Chiku-ho mine, and the output reaches some 500,000 *tons*. As the coal contains sulphuric elements, its burning power is strong, and it is favorably received as a material for gas manufacturing; and for the use by ships, the company's coal is the best of all.

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* Japan's Financial Economic Monthly.

FAR EASTERN COMPANY REPORTS

TANJONG PAGAR DOCK BOARD.—The report for the Board for the half-year ended December 31st is reviewed by the *Singapore Free Press* as follows:

In the course of the report, which is signed by Mr. S. A. Lane, we see that the credit balance of revenue account for the half-year under review amounts to $746,324.31 which, together with the sum of $61,092.09 brought forward from the previous half-year's accounts, gives a balance at credit of $807,416.40.

Allocation of Balance.—Of the total disposable balance of $807,416.40, interest paid or due to Government in respect of Loan Funds raised in pursuance of Ordinance No. IV of 1907 absorbs the sum of $600,000.67. The balance remaining of $207,415.73 has been appropriated as follows:—

Transferred to Reserve Fund, under Section 31 (2)	$100,000.00
Transferred to Renewals Equalization Fund	20,000.00
Transferred to Fire Insurance Reserve Fund	25,000.00
Carried forward to next half year	62,415.73
	$207,415.73

The comparison of revenue with previous half-years since the formation of the Board, shows that exclusive of work on the Board's own account done in the docks and workshops, the following are the figures for the two halves of the year:

	Wharf.	*Docks.*	*Total.*
1905	$1,364,971	$ 969,760	$2,334,731
	1,491,341	1,016,067	2,507,408
1906	1,453,823	854,626	2,308,449
	1,547,028	1,000,594	2,547,622
1907	1,479,684	1,057,645	2,537,329
	1,516,291	986,281	2,502,572
1908	1,258,281	961,646	2,219,937

The balances for the same periods were as follows:—

1905, $663,319.97; 1906, $702,713.45, $817,-642.85; 1907, $803,944.40, $857,158.65; 1908, $804,772.01, $746,324.31.

Decrease of Trade.—As will be seen, the Board have to record a decrease in the net revenue of $58,697.70, as compared with the previous half year, and of $28,852, as compared with the average half-yearly net revenue since the inception of the Board.

The decrease in the Wharf gross revenue is $258,000 and in the net revenue $144,000, which is due to world wide trade depression reflected generally in the Colony, and is in sympathy with the decreased tonnages of vessels berthed and cargo and coal handled at the Board's Wharves. Coal handled gives a decreased tonnage of 179,269 and cargo one of 52,231.

Gross Wharf revenue per ton of cargo and coal inwards and outwards is, however, up to the average. Gross Wharf revenue per ton of total tonnage of vessels berthed shews a decrease in that vessels have not discharged cargo here up to the average quantity, 1,137 vessels having involved cargo and coal inwards and outwards to the extent of 880 tons per vessel against 1,013 tons per vessel in the half year ending 30th June, 1908. Dock-yard gross revenue shows a decrease of $24,635; the net revenue, however, gives an increase of $78, 48, which is in the main due to the fact that at 30th June last a much heavier amount of work was in progress than usual, the profit on which fell to this half-year. The increased expense of $35,693 in repairs and renewals is accounted for to a great extent by the condemning and consequent replacement of six lighters. The balance on surplus revenue account, which at 30th June last stood at $256,-718.08, now amounts to $163,019.49, shewing a net decrease of $93,698.59, having been drawn upon to that net extent to provide funds for the expenditure made during the half-year on new works not payable from Loan Funds.

The expenditure during the half-year on new works not chargeable to Loan Account amounting to $197,720.45, has been debited to this Fund. The Ordinance to provide for the fixing of the amount to be assumed by the Board as a liability to Government in respect of the initial capital cost of the undertaking has not yet been introduced into Legislative Council. This matter is still under consideration by Government; meantime interest is being paid at the rate of 4 per cent on the suggested amount of $29,003,149.45 in respect of this item, and also at the same rate on payments made in pursuance of Ordinance No. IV of 1907, from Loan Funds, both in accordance with a letter from Government dated 15th Nov., 1907.

STATISTICS.

No. of vessels at Wharves and Tonnage.

1905	1,138	2,208,774
	1,244	2,327,378
1906	1,226	2,373,626
	1,286	2,331,289
1907	1,270	2,415,921
	1,227	2,447,845
1908	1,137	2,142,629

TONNAGE OF CARGO DEALT WITH.

	Inward.	*Outward.*
1905	611,382	501,324
	674,755	544,323
1906	606,627	530,402
	663,947	565,023
1907	632,676	520,321
	673,866	558,865
1908	496,817	504,414

Dry Docks.—During the half-year 130 vessels (exclusive of the Board's own craft) were docked for repairs and painting, giving a total tonnage based on the tonnage in Dock daily of 776,165 tons.

The actual gross tonnage of vessels in dock were:—

	Tons
Half-year, June, 1908	181,180
Half-year, December, 1908	185,896

The four Dry Docks were occupied for a total of 531 days, as compared with 479 days in the previous half year.

New Works.—The extensions of the railway to Godown No. 3 and from Victoria Dock to Godown No. 17 have been completed. Further work of considerable extent in diversions of the system has been rendered necessary to meet the requirements of the Reconstruction Works, and to maintain adequate accommodation for the Board's traffic during their progress.

The centralization of workshops at Keppel Harbour proceeded satisfactorily.

A contract was placed with Messrs. Lysaght and Company of Bristol for the supply of steelwork for the erection of shipbuilding sheds covering an area of 200 feet by 120 feet, delivery of which was made in December. The foundations for these had meantime been in progress and the approaches to the slipways, involving the removal of the old wharf in front, satisfactorily completed.

The Wet Dock.—In the new wet dock and reconstruction of Main Wharf the Board have followed the progress of the new works with much interest. The cofferdam was satisfactorily closed and the tidal area pumped out early in September, and the excavations over the site of the dock and in the trenches for the sidewalls forthwith put in hand, whilst tipping the embankment for the diversion of Keppel Road and the main eastern and western drains, with the subsidiary works thereto, were practically completed. The reconstruction of the Main Wharf—Section "A" to "B" was put in hand, and dredging operations, which involve subaqueous drilling and blasting the rock foundations, pushed forward. The Blockyard has been in full operation, and concrete blocks to the extent of 10,700 cubic yards were cast at 31st December. The erection of stagings, temporary workshops buildings and generally the laying out of the works has been commensurate with the usual practice of contracts of such extent, and the provision of plant and appliances by the contractors, leaves nothing to be desired, and it is to be anticipated that the scheme of procedure as proposed by them will show at an early date a more proportionate result in permanent work executed to the extent and duration of the contract than has hitherto been apparent.

New Graving Dock at Keppel Harbor.—A contract dated January 1st, 1909, for the construction of a Graving Dock at Keppel Harbor, was entered into with Messrs. Topham, Jones and Railton, contractors of Westminster, London, in the sum of £342,793, and for completion of the work by November, 1912. The dimensions of this dock are to be 852 feet in length by 128 feet between copings, the entrance being 100 feet wide and the depth on sill 25 feet at L. W. O. S. T., thus affording 34 feet of water at H. W. O. S. T. Provision is made by an intermediate Caisson for dividing the Dock into two compartments of 486 feet and 325 feet respectively.

Coaling Depot at Pulo Brani.—Protracted negotiations for the acquisition of the Admiralty Coal Depot at Pulo Brani, to meet the congestion of the coal storage accommodation on the Board's premises, have at length been satisfactorily determined, a lease for 10 years having been granted by the Admiralty to the Board, upon terms which include the erection of a new unloading jetty and the repair and maintenance of the existing coal sheds and premises at the Depot.

Prye River Dock, Penang.—Progress on the new wharf construction has proceeded satisfactorily, 104 piles having been screwed into position and braced together. Rather over one-half of the decking and superstructure of the wharf was completed and the railway lines proceeded with. A further 12,000 cubic yards of filling were deposited in the reclamation works. The system of sidings to connect with the Federated Malay States main line at Prye was put in hand, and good progress made with the embankments and plate laying. A "Gridiron" for repairing tonkangs was put in hand, and the lagoon basin deepened and the quay wall adjacent raised to the level of the reclamations. The half-year's profit of $19,578 may be again considered satisfactorily, and compares favorably with the previous half-year's working.

Government Wharves, Penang.—The Board are pleased to report that the progress of this undertaking has been entirely satisfactory, and would appear to have met with the approval of the local community and shipping interests of Penang.

The development of business may be observed from the table of tonnage handled during the first six months of the undertaking which shows a tonnage increase from 11,018 in July to 35,853 in December.

To meet the increasing traffic, Government has liberally provided funds for plant and appliances, and the general equipment of the quays and sheds, and have in view further developments for the improvement of the present facilities and accommodation. Some $235,000 have been voted by Government for the initial equipment and developments during the six months under review, this apart from the capital expenditure incurred in the building of the new sheds and provision of electric cranes, etc.

The profit for the first half-year's working in the sum of $30,387.26 may be considered satisfactory, this as it does allowing for various expenses incidental to the initiation of the undertaking, which have been charged to revenue and which will not be recurrent.

CHINESE ENGINEERING & MINING CO., LIMITED.—This company has declared an interim dividend of one shilling and six pence a share on account of year ended February 28th, 1909.

KYUSHU RAILWAY.—This company has declared a dividend of 9% per annum.

THE CANTON-HANKOW RAILWAY.—The accounts for the last year show a credit balance of $128,282,316 out of which the sum of $128,000 was transferred to General Account and the balance to working account.

BANGKOK DOCK CO., LTD.—The net profits for the year were Ticals 56,172 out of which a dividend of 5% was directed paid and the balance of Ticals 8,872 was carried forward.

SEREMBAN ESTATE RUBBER CO., LTD.—This company has paid a final dividend of 26% making in all 38% for the year.

GOPENG TIN MINING CO., LTD.—This company recently declared a dividend of 1s. 6d. a share.

THE NEW GOPENG MINING CO., LTD.—A dividend of 6d. a share has been paid.

THE TEKKA LTD.—A dividend of 6d.

ROYAL JOHORE TIN MINING CO.—This company declared a dividend of 3% and carried forward $579.23.

THE DAMANSARA RUBBER CO., LTD.—A final dividend making 12% for the year has been paid by this company.

SINGAPORE SLIPWAY CO.—The balance to the credit of profit and loss for the year was $37,420, out of which $6,100 was written off for depreciation, $15,000 to general reserve, a dividend of $6 a share paid and the balance carried forward.

SIPIAU TIN CO.—A dividend of 3% was declared for the half year ended December 31st, 1908.

MEIJI FIRE INSURANCE COMPANY.—This company declared a dividend at the rate of 20% per annum.

JAPAN FLOUR MILL CO.—This Company has declared a dividend of 6% per annum.

KLANANG PRODUCE COMPANY, LTD.—A final dividend has been declared of 10% making in all 15% for the year.

ANGLO-FRENCH LAND INVESTMENT CO., LTD.—This company authorized the payment of a dividend of Tls. 6 a share for the year.

MESSRS. HALL & HOLTZ, LTD.—A dividend of 10% was declared and a balance of $9,000 carried forward.

THE SIAM COMMERCIAL BANK, LTD.—The credit balance for the half year ended March 31st was Ticals 223,609.30, out of which Ticals 75,000 were added to the extraordinary reserve and Ticals 21,105 to the ordinary reserve besides paying a dividend of 3% for the half year.

HONGKONG ELECTRIC CO., LTD.—This company paid a dividend of 10% and a bonus of 2% and after writing off depreciation, paying bonuses, etc., carried forward $11,043 to next account.

SHANGHAI HORSE BAZAR CO., LTD.—This company paid a dividend of 10% for the year 1908.

THE CHINA PRINTING CO., LTD.—This company directed the payment of a dividend of 7% for the year 1908.

TOKYO MARINE INSURANCE CO.—A dividend of 4% for the half year term was paid by this company.

HODEN KEROSENE OIL COMPANY.—At the general meeting held last month this company declared a dividend at the rate of 30% per annum for the last half year.

SIMO RUBBER ESTATES LTD.—This company has paid a dividend of 8%.

NATIONAL BANK OF CHINA, LTD.—The following is the directors' report on this institution for 1908:

"The gross profits, including $10,223.09 brought forward from last year, are $265,389.36, which, after deducting all charges, leave a net profit of $180,552.57; this the Directors propose to deal with as follows:—Place to reserve fund $150,000 and carry forward balance of $30,552.57 to next account.

J. LLEWELLYN & CO., LTD.—This company paid a dividend of $7.20 for the year besides a bonus of 5% paid the manager and two assistants on their salaries.

CEYLON PLANTERS' RUBBER SYNDICATE, LTD.—A dividend of 28% was declared at the ninth annual meeting of the shareholders of this company besides placing Rs. 40,000 in extension account and carrying forward Rs. 2,728.

RILEY, HARGREAVES & CO.—The 10th annual ordinary general meeting of the shareholders of the above Company was held in the Registered Office of the Company, No. 5 Read Street, at 12 noon, Wednesday, April 28th.—Present.—Messrs. C. E. F. Sanderson, (Chairman); M. E. Plumpton, C. W. Darbishire, R. M. Goldie and T. C. B. Miller, (Directors).

There were also present Rev. N. J. Couvreur and Messrs. E. F. H. Edlin, J. H. Drysdale, D. Miller, S. Katz, A. Fleming, J. L. Montgomerie, J. A. N. Pickering, H. P. Bagley, H. Winkelman, Thomson, J. Allan, Crofts, Jack, and other shareholders.

After a few explanatory remarks by the Chairman, several questions were put by the shareholders and answered.

The report and accounts for the year ending 31st December, 1908, were then adopted and a dividend of $7 per share on preference shares and $5 per share on ordinary shares declared.

Messrs. M. E. Plumpton and T. C. B. Miller were re-elected Directors of the Company.

Messrs. Gunn and Company and W. Lowther Kemp were re-elected Auditors.

A vote of thanks to the Chairman brought the meeting to a close.

THE NEW ZEALAND INSURANCE COMPANY, LTD.—A dividend of 10% was declared by this company for the year 1908.

THE COLONIAL BANK OF HOKKAIDO.—At the semi-annual meeting of this institution a dividend of 9% per annum was declared.

THE FIRST BANK.—The following accounts and recommendations of the directors for the half year term were approved:—

	Yen.
Net profit for the term	1,040,849
Brought from last term	537,666
Total	1,588,515
Bonus and pension fund	52,440
Reserve	400,000
Korean branch reserve	100,000
Dividend to shareholders (10% per annum)	500,000
Carried to next accounts	536,075

DAI NIPPON WHALING CO.—The following accounts and recommendations for the term were approved:

	Yen.
Net profit	85,216
Brought from previous term	5,419
Total	90,635
Legal reserve	4,260
Special reserve	4,260
Sinking fund	4,260
Sinking fund for organizing expense	740
Dividend (10 per cent. per annum)	75,000
Carried to next account	2,114

THE TOKYO GAS COMPANY.—The following accounts and distribution of profits for the term were approved:

	Yen.
Profit for the term	794,545
Brought from last term	71,343
Total	865,888
To reserve	40,000
Special reserve	43,938
Bonus	15,891
Pension fund	7,95
Dividend (13% per annum)	685,664
Carried forward	72,449

THE SHELL TRANSPORT AND TRADING CO.—An interim dividend of 1s. a share has been declared making with interim of last July 10% for the year 1908.

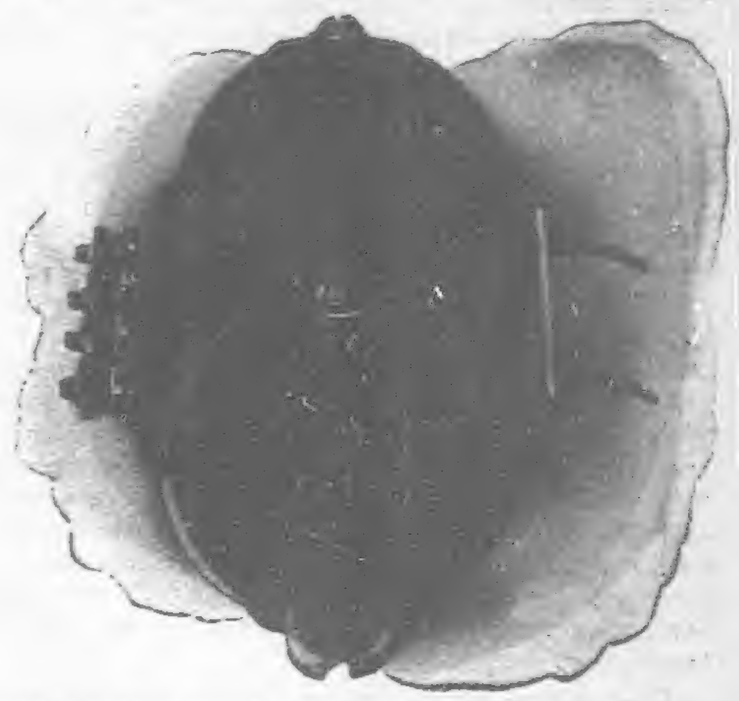
WEST POINT BUILDING CO., LIMITED.—This company declared a final dividend of $2 making $4 for the year 1908.

HONGKONG LAND INVESTMENT AGENCY, LTD.—This company declared a final dividend of $3.50 making $7 for the year 1908.

THE FUJI GAS SPINNING CO.—This company paid a dividend of 14% per annum for the last half year term.

A NEW BELL RINGING TRANSFORMER

The electric bell and its heretofore indispensable ally, the primary battery, date back to the early days of the electrical industry. The same can be said of the alternating current transformer. But the combination of the transformer and the electric bell is of modern origin and the direct result of a desire to get



rid of the troublesome and trying situations arising from the use of primary or storage batteries.

To meet this demand the General Electric Company has recently placed on the market a transformer for ringing electric bells. This transformer has a low voltage secondary winding with taps giving 6-12 and 18 volts when the primary is connected to the ordinary 110 volt lighting circuit The transformer will operate successfully on circuits ranging from 100 to 130 volts at the usual lighting frequencies.

Materials of the highest quality are used in the construction and the design has received the same careful consideration as is given to larger transformers. Compactness, freedom from mechanical defects and absolute reliability are the resulting features.

The entire transformer is so small that it may be held in the hand. The general design has been proportioned for very low losses, the core loss being practically negligible. The transformer is designed in such a manner that a continuous short circuit on the secondary will do no damage either to the transformer or adjacent circuits.

The core and coils are placed in a small metal box with lugs or feet attached for convenience in fastening to the wall or ceiling. A screwdriver is the only tool needed for installing the transformer after which it requires no attention whatever. This is in strong contrast to the ordinary primary battery.

This transformer may also be used to advantage for operating buzzers, spark coils, burglar alarms, miniature lamps, door locks, gas lighting and annunciator systems.

CORPORATE METHODS OF PUBLIC ACCOUNTING IN THE PHILIPPINES

The Governor-General has submitted to the Legislature the report of Messrs. Haskins & Sells, Expert Accountants of New York City, upon the accounting system of the various Governments of the Philippine Islands. It appears from their report that the system of accounting in the following Bureaus were examined by them: Audits, Treasury, Internal Revenue, Public Works, Navigation, Posts, Education, Prisons, Printing, Supply, and the Insular Ice Plant, as well as the Province of Laguna and the Municipalities of San Mateo and Pasig, having conferred with a number of Provincial Treasurers and District Auditors.

Speaking of the Insular Government they state that the transactions originate in and are stated by an administrative Bureau or Office and are verified by the Insular Auditor independently which is a double check upon all transactions except the final assembling of all the Bureau accounts by the Auditor. That the system introduced and now in effect is based upon correct accounting principles which take into account the revenues collected whether they have been deposited in the Treasury or not, and obligations incurred or accrued for expenditures whether paid or not, and efficiently administered should prove a safeguard to the Government. That such system is in accordance with modern methods to be found in most well organized businesses and is in advance of the method adopted by Governments generally which for the most part adhere to the plan of accounting for the actual cash as received and as paid out.

The report makes recommendations looking to the simplification of the Internal Revenue and Provincial accounting which has been the subject of some complaint by provincial treasurers upon whom has fallen the brunt of the work, recommending that the ten reports now rendered monthly of Internal Revenue and Municipal collections be consolidated into one, stating that by the adoption of their recommendations along this line the work of the municipal treasurer will be simplified and reduced, the bookkeeping in provincial treasurers' offices will be simplified and reduced at least one-half and the work of district auditors in provincial and municipal offices, and their reports therefore will be facilitated and simplified without removing any of the present safeguards from their audit.

The report contains a comparison of the present system installed by Acting Auditor Clarke, in charge of the Bureau of Audits since July, 1907, and the former system installed under the direction of Auditor Lawshe, now Third Assistant Postmaster General at Washington, showing important changes in the following respects:

"The provisions made for taking into the general accounts, in the period for which it accrues, the revenue as reported by collecting officers, whether remitted to the Treasurer or not, the obligations incurred for expenditures, and the amount of interest accrued, whether paid or not, on outstanding obligations.

"The provisions made for the classification of accounts of the Insular Government as between permanent improvements to be shown as assets, operations and appropriations, and the industrial operations, and the preparation of balance sheets and statements of accounts in accordance therewith.

"The introduction of check voucher warrant system for payments.

"The introduction of the system of auditing before payment, the accounts for disbursements of the Insular Government, except some of the pay rolls, and the auditing of the accounts of the collections of customs for the Port of Manila, before they are reported.

"The establishment or improvement of cost accounts for bureaus or divisions having industrial operations, such as Printing, Prisons, and Navigation.

"The provisions for uniform recording and accounting for stocks of supplies and property and equipment by bureaus and offices and for concluding such accounts in the Insular balance sheet.

"The introduction of journal abstracts with columns provided for accounts of frequent recurrence, by means of which voluminous journalizing and posting is eliminated.

"The settlement of inter-bureau transactions on approved vouchers, passed through the Auditor's journal charging and crediting the bureaus and offices, avoiding actual cash payments and receipts between them."

The report concludes with the statement that the signers "had not attempted to call attention to the many favorable conditions, aside from those of the system of accounting, found in the bureaus and offices. The character of the personnel, however, is conspicuous and has an important relation to the accounts as well as the administration of the Government; directors of bureaus, chiefs of divisions and clerks, are all deeply interested in their work. They show fitness for their respective undertakings and express interest in and welcome changes that are calculated to simplify the work—reducing the red tape without removing any of the safeguards and increasing the efficiency. They are energetic, enterprising, and enthusiastically devoted to their respective undertakings, The spirit and animation shown is unlike that found in Government, State, and Municipal offices usually, and compares favorably with that in corporate and private affairs."

The quotation above is of special significance in view of the fact that Mr. Sells is not impressed with usual management of government bureaus in the United States. In a speech* made at a banquet of the Certified Public Accountants of the State of New Jersey at Newark in January, 1908, in response to the toast "The American Association of Public Accountants," Mr. Sells said:

"I know as a matter of fact that the management of our great properties is generally intelligent and economical, and that the management of our Government bureaus is generally loose, irregular, and frequently dishonest: when I read the articles with which so many of our newspapers and magazines are filled nowadays, reflecting on men whose genius is developing the country's resources, and when I hear the proposals of politicians, from the most eminent to the least, for the passage of laws to hamper and restrict the energies of these men on the theory that their integrity is open to suspicion, my mind inevitably brings up the contrast that I always observe between a corporation's way of doing things and a government's, as disclosed by their respective records and books of account.

"For the purpose of this comparison, incompetency and dishonesty need not be separated. Putting them together it is my deliberate estimate, that, judged by the highest standards prevailing in the best conducted corporations, there is less than 10 per cent of both among men in the management of corporations generally, and at least 90 per cent of both among public office holders, and I base this estimate upon my experience as a public accountant."

Messrs. Haskins & Sells were called by Congress in 1893 under the Dockery Act to revise and simplify the accounts of the Government at Washington, and later were employed to straighten out and adjust the accounts of the City of Chicago and the State of Kansas. They have offices at New York, Chicago, Cleveland, Pittsburg, and London, England, and while Mr. Sells returned from Manila to New York, his able assistant, Mr. C. E. Morris, C. P. A., sailed for Australia and New Zealand on the *Taiyuan* a few days ago with so many engagements ahead of him that he cannot expect to reach his home before the middle of the summer. He was accompanied by Mr. Thomas Russell Lill, one of the most efficient members of Auditor Clarke's staff, who expects to put in his entire leave of absence upon account work.

It is to be noted that the present system has been of direct benefit to the public. Importers are not now called upon for additional duties upon re-liquidation of their customs duties months after the goods have been received and sold—audit is now had before the duties are paid and so far as the Government is concerned the liquidation is final. Payments by the Government are made more promptly than ever before and the annual report of the Auditor for 1908 was issued October 4, three months earlier than any report issued under the former régime.

**The Government Accountant, June, 1908.*

MANILA RAILWAY EXTENSIONS

Authorization for the construction of a line connecting the pueblo of Lucena with Albay, a distance of 160 miles, has been given the Manila Railway Company, and with its completion Manila will be connected by rail with the most southern section of Luzon. This extension will traverse the Camarines and Albay province passing through the gold mining region in the Camarines and the rich hemp belt of Albay. The lines through Batangas and Tayabas provinces to Manila will thus be taxed to carry the enormous traffic sure to be fed to them from these sections.

In addition to the Lucena-Albay extension, the company will connect the railway extension from Dagupan to Camp One on the Baguio Road with the town of Baguio, the summer capital. This latter will make connection between Manila and the Benguet region. It has not been decided whether it will be a steam or electric line. An investigation is being made of the capacity of the Bued River to supplying power for a generating plant, and until the report is submitted, this feature will remain an open question. The railway will be built, however, at an early date.

MANILA ELECTRIC RAILWAY EXTENSION

The Manila Electric Railway Company has concluded plans for an extension of their suburban lines to the Laguna de Bay at Bagombayan and to operate from that point a number of swift lake steamers to connect with the famous Pagsanjan Falls and Gorge. The plans also contemplate the erection of a first class hotel at Pagsanjan for the accommodation of visitors.

The line proposed will extend from Fort McKinley through Pateros, Taguig, and along the lake front to Bagombayan, a distance of six miles. This will put the lake country very closely in touch with Manila and these vessels on the lake will be welcomed as an improvement on the present very indifferent service given by the native lines.

The vessels may be put on before the line is built to Bagombayan. Pasig, which is now in touch with the city by the suburban line, may be made the port at which connection will be made with the steamers. It is expected, however, that when the plans are completed Pagsanjan will be put within four hours of Manila, and the Gorge become a favorite week-end resort for the residents of the capital.

The extension to Pagsanjan has been made the subject of a favorable report by Mr. C. G. Young of New York who visited the islands for the express purpose of looking into several engineering projects for the firm of Messrs. J. G. White & Co.

PHILIPPINE GOLD OUTPUT, APRIL

Paracale Gold Dredging Co., 652 ounces. Benguet Consolidated, 219 bullion and 118 pounds cyanide.

F. M. S. TIN OUTPUT, MARCH

Belat	592
Bruseh	310
Gopeng	630
Kanaboi	271
Kinta	410
Kledang	380
Kuantan	69
Lahat	701
New Gopeng	125
Pahang Consolidated	1700
Pusing Lama	680
Rambutan	290
Redhills	625
Royal Johore	87
Sempam	100
Serendah	300
Sipiau	106
Tekka	400
Tronoh	2103

CONTRACTING NEWS

*Chief Quartermaster, U. S. A.—Six steel lorchas, bids received to June 15th, 1909.

Philippine Government Coal Contract.—40,000 tons—Bids opened May 17th. Messrs. W. F. Stevenson & Co. representing Andrew Weir & Co., ₱10.55 Manila, outside ports ₱11.35 except Cebu, ₱11.05; Macondray & Co. ₱10.64 Manila, balance ₱11.64 except Cebu and Iloilo ₱11.39; Macleod & Co., ₱11.35 Manila, balance ₱12.25 except Iloilo and Cebu, ₱12.80. Mitsui Bussan Kaisha, Manila ₱10.65, balance average ₱12.80; Madrigal & Co., Manila, ₱11.08, average ₱12.20; Warner Barnes & Co., Manila, ₱11.43, outside, average ₱13.63 except Cebu and Iloilo ₱12.08; Smith Bell & Co., Manila, ₱10.98, outside, average ₱12.50 except Puerto Princesa, etc., ₱28.50. Contract awarded Messsr. Stevenson & Co. Arrangement this year makes saving of ₱40,000 on last year's contract.

Philippine Government Cement Contract.—40,000 barrels—Opened May 8th. Contract to be awarded on basis of quality compared to price named in bid after seven days test—not yet decided. W. H. Anderson & Co., Green Island, Emerald, ₱4.19; Finlay & Co., Alsen's, ₱4.49; H. W. Peabody & Co., Atlas, ₱4.73; Castle Bros.-Wolf, Asano, ₱4.54; Smith, Bell & Co., Dragon, ₱4.16; Macondray & Co. Pyramid, ₱4.37; Behn Meyer & Co., Menmoor, ₱4.19; Mitsui Bussan Kaisha, Oneda Portland, ₱5.30. Saving of ₱24,000 indicated compared with 1908.

Chief Quartermaster U. S. Army, Mineral Oil.—360,000 gallons—Opened May 5th.

Philippine Public Works.—Pandacan Quarantine Station, six cattle sheds—J. H. Williams, ₱4,725 for each shed, a total of ₱28,350; E. E. Calvin, ₱49,400; R. Soriano, ₱41,544; O. F. Campbell, ₱34,974; S. A. Reich, ₱5,450 each, a total of ₱32,700; Delmar Smith, ₱35,630; S. C. Choy, ₱55,250; Atlantic, Gulf and Pacific Company, ₱24,849; R. Machuca Gotauco, ₱6,700 for each shed, a total of ₱40,200.

Chief Quartermaster, U. S. A., Manila.—Galvanized iron sheeting, 40,000 pounds, ridge-roll 30,000 lineal feet, awarded May 5th. Awarded Messrs. W. F. Stevenson & Co., ₱.03 per pound and ₱.0323 a foot respectively.

Chief Quartermaster, U. S. A., Manila.—Rope, 100,000 pounds—Awarded April 30th, Messrs. W. H. Anderson, product, Hongkong Rope Manufacturing Co., price ₱.168.

Chief Quartermaster, U. S. A., Manila.—Bids will be received for the construction of one light twin screw river steamer to June 16, 1909.

Imperial Tientsin-Pukow Railway Southern Section.—Nanking.—Tenders invited for Twenty Thousand (20,000) Casks of Portland Cement to be delivered on the Railway Wharf, Pukow, NOT later than 31st Day of AUGUST, 1909.

*City of Manila.—Bids will be received to July 1st for the furnishing of approximately 160 gate valves, 20 air valves, and 325 fire hydrants by the Secretary of the Municipal Board, Manila.

*City of Manila.—Bids will be received to June 1st for the furnishing of 7,000 tons of cast iron pipe hub and spigot pattern; about 56 tons of 20-inch flexible joint and flanged cast iron pipe; two tons flanged cast iron pipe and about 200 tons of cast iron specials, by the Secretary of the Municipal Board, Manila, or address Chief of Bureau Insular Affairs, Washington.

Imperial Tientsin-Pukow Railway.—Tenders invited, to be opened June 21st, 1909, by the Managing Director at Nanking, China, for the furnishing free of all charge at the wharf at Pukow, not later than December 31st, 1909, Steel Plate Girders as follows:

26 Spans of Deck Girders, 12 feet clear span; 12 Spans of Deck Girders, 20 feet clear span; 60 Spans of Deck Girders, 30 feet clear span; 12 Spans of Deck Girders, 50 feet clear span; 2 Spans of Through Girders, 50 feet clear span; 3 Spans of Deck Girders, 75 feet clear span; 3 Spans of Through Girders, 75 feet clear span.

Quotations in sterling and bids must be presented on or before June 20, 1909.

PROPOSALS FOR CONSTRUCTION OF SIX STEAM LAUNCHES.—Headquarters Philippines Division, Office of Chief Quartermaster, Manila, P. I., May 20, 1909. Sealed Proposals, in triplicate, subject to the usual conditions, will be received here until 10:00 a. m., July 15th, 1909, and then opened, for the construction and delivery of six Steam Launches. Blank forms, plans and specifications furnished upon application to this office and to the representative of the Consular Service of the United States at Hongkong, Shanghai and Singapore. Envelopes containing proposals should be endorsed "Proposals for construction of six Steam Launches, to be opened at 10:00 a. m., July 15th, 1909" and addressed to the Chief Quartermaster, Philippines Division, Manila, P. I

PROPOSALS FOR REPAIRING THE U. S. A. T. "WARREN": Headquarters Philippines Division, Office of Chief Quartermaster, Manila, P. I., May 15th, 1909. Sealed Proposals, in triplicate, subject to the usual conditions, for repairing the U. S. A. T. "WARREN, will be received here until 10:00 A. M., July 10, 1909, and then opened. Information and blank forms furnished upon application to the Representative of the Consular Service of the United States at Hongkong, Shanghai, Singapore and Chief Quartermaster, Philippines Division, Manila, P. I. Envelopes containing proposals should be endorsed "Proposals for repairing the U. S. A. T. 'WARREN,' to be opened at 10:00 A. M., July 10, 1909," and addressed to the Chief Quartermaster, Philippines Division, Manila, P. I.

Proposals for Light Draft Twin Screw River Steamer.—Headquarters Philippines Division, Office of Chief Quartermaster, Manila, P. I., May 5, 1909. Sealed Proposals, in triplicate, subject to the usual conditions, will be received here until 10:00 a. m., June 16th, 1909, and then opened, for the construction and delivery to this department, complete and ready for service, of one (1) Light Draft Twin Screw River Steamer. Blank forms and full information will be furnished upon application to the United States Consular representative at Hongkong, Shanghai and Singapore, and the Chief Quartermaster, Philippines Division, Manila, P. I. Proposals should be enclosed in sealed envelopes, endorsed "Proposals for Light Draft Twin Screw River Steamer, to be opened at 10:00 a. m., June 16th, 1909," and addressed to the Chief Quartermaster, Philippines Division, Manila, P. I.

Proposals for Six (6) Steel Lorchas.—Headquarters Philippines Division, Office of Chief Quartermaster, Manila, P. I., May 1, 1909. Sealed Proposals, in triplicate, subject to the usual conditions, will be received here until 10:00 a. m., June 15, 1909, and then opened, for the construction and delivery to this department, complete and ready for service, of six (6) steel lorchas. Blank forms and full information will be furnished upon application to the United States Consular representative at Hongkong, Shanghai and Singapore, and the Chief Quartermaster, Philippines Division, Manila, P. I. Proposals should be enclosed in sealed envelopes, endorsed "Proposals for Six (6) Steel Lorchas, to be opened at 10:00 a. m., June 15, 1909," and addressed to the Chief Quartermaster, Philippines Division, Manila, P. I.

OFFICE OF THE MUNICIPAL BOARD.—Manila, P. I., January 20, 1909.—Sealed Proposals or bids will be received by the Secretary of the Municipal Board, Manila, P. I., until 12 o'clock m., June 1, 1909, for furnishing cast-iron pipe and specials for the City of Manila, Philippine Islands.

The total amount to be furnished will be approximately seven thousand (7,000) tons of cast-iron pipe, hub and spigot pattern; about fifty-six (56) tons of 20 inch flexible joint and flange cast-iron pipe; about two (2) tons of flanged cast-iron pipe, and about two hundred (200) tons of cast-iron specials.

Specifications, general plans, and blank forms of proposals may be obtained at the office of the Secretary of the Municipal Board, Manila, P. I., or from the Chief of the Bureau of Insular Affairs, Washington, D. C.

Each proposal must be accompanied by a certified check for ten thousand dollars ($10,000), United States currency, drawn on a local bank; or a bond in like amount, signed by a fidelity insurance company, authorized to give such bond in the Philippine Islands, as a guaranty that the bidder, if awarded the contract, will, after due notification, promptly enter into contract and furnish an acceptable bond in the sum of twenty (20) per cent of the sum total of the contract price for the faithful performance of the work.

The right is reserved to reject any or all bids.

H. L. Fischer,
Secretary of the MunicipalBoard.
J. F. Case,
Chief Engineer, Department of Sewer and Waterworks Consiruction.

Office of the Municipal Board.—Manila, P. I., February 15, 1909.

Sealed bids or proposals will be received by the secretary of the Municipal Board, Manila, P. I., until 12 o'clock m., July 1, 1909, for furnishing gate valves, air valves and fire hydrants for the city of Manila, Philippine Islands.

The total amount to be furnished will be approximately one hundred and sixty (160) gate valves, twenty (20) air valves, and three hundred and twenty-five (325) fire hydrants.

Specifications, general plans, and blank forms of proposal may be obtained at the office of the secretary of the Municipal Board, Manila, P. I., or from the Chief of the Bureau of Insular Affairs, Washington, D. C.

Each proposal must be accompanied by a certified check for three thousand dollars ($3,000), United States currency, drawn on a local bank; or a bond in like amount, signed by a fidelity insurance company, authorized to give such bond in the Philippine Islands, as a guaranty that the bidder, if awarded the contract, will, after due notification, promptly enter into contract and furnish an acceptable bond in the sum of twenty (20) per cent of the sum total of the contract price for the faithful performance of the work.

The right is reserved to reject any or all bids.

H. L. Fischer,
Secretary of the Municipal Board.
J. F. Case,
Chief Engineer, Department of Sewer and Waterworks Construction.

Proposals for Furnishing Towboat.—Headquarters Philippines Division, Office of Chief Quartermaster, Manila, P. I., April 15th, 1909. Sealed proposals, in triplicate, subject to the usual conditions, for furnishing and delivering to the Quartermaster's Department, U. S. Army, Manila, P. I., one seagoing, single screw, towboat, will be received here until 10:00 a. m., June 1st, 1909, and then opened. Certified check in ten per cent (10%) of amount of bid must accompany proposals. Blank forms and full information furnished upon application to this office. Envelopes containing proposals should be endorsed "Proposals for furnishing towboat, to be opened at 10:00 a. m., June 1st, 1909," and addressed to the Chief Quartermaster, Philippines Division, Manila, P. I.

*Advertised in the Far Eastern Review.

FAR EASTERN ENGINEERING, CONSTRUCTION, COMMERCIAL AND FINANCIAL NEWS

ELECTRIC RAILWAYS, LIGHT, POWER, TELEGRAPHS, TELEPHONES, AIRSHIPS, ETC.

AMERICAN-KOREAN ELECTRIC COMPANY.—It is reported that negotiations are under way for the sale of this company to Japanese capitalists.

WUHU ELECTRIC LIGHT PLANT.—The new plant recently installed at this place began operations on March 1st and has given very satisfactory service.

RAILWAY GAS PLANT.—The South Manchuria Railway will begin work on its gas plant at Dalny about the last of June. All the equipment has been ordered.

WIRELESS FOR HONGKONG.—The establishment of a wireless station is now being agitated at Hongkong in view of the importance of the port and its value to shipping.

JAPANESE ELECTRICAL INVENTIONS.—An encouragement fund has been started by the Electrical Association of Japan for rewarding successful inventors of electrical appliances.

CHINESE LONG DISTANCE TELEPHONES.—A German and an American company have each asked for a franchise from the Chinese Government to instal a system that would connect Peking, Hankow, Nanking and Canton.

DAIREN-CHEFOO CABLE.—The preliminary survey preparatory to the laying of the cable by the joint Japanese-Chinese company between these two points is now under way. The service is expected to be operating about November.

SHANGHAI WIRELESS.—The Chinese government has directed that no wireless stations be permitted installed by foreigners in the Settlements. The claim is that such installation affects the interests of the Chinese Telegraph Company.

ANTUNG ELECTRIC LIGHT AND MOTOR CO.—This company which has only been operating for the last three months under joint Chinese and Japanese management is meeting with success. There are over 1,500 lights being supplied at the present time.

TOKYO ELECTRIC LIGHT COMPANY.—This company is raising a loan for the purpose of constructing a power house on the lower course of the Katsuragawa below the site of the present plant. It is expected to complete this section of the extension work in four years.

ORIENTAL ELECTRICITY COMPANY.—This is the name adopted by the organization formed by the General Electric, the Shibaura Engine Works and the Tokyo Electric Company with a capital of yen 4,000,000 of which the American company takes 2,120,000 yen.

KEIHAN ELECTRIC RAILWAY.—The equipment of this railway that is to connect Kyoto with Osaka, double track, 30 miles in length, has been ordered from Messrs. Dick, Kerr & Co., Messrs. Williams and Robinson and Messrs. Babcock & Wilcox. These English firms will supply the electrical plant, the turbines, and the boilers respectively.

JAPANESE TELEPHONES.—The number of telephones installed in Tokyo and Osaka at the close of 1908 was 30,000; the number in Kyoto, Nagoya, Kobe and Yokohama, 12,000; and the number in other parts of the Empire 30,300, making a grand total of 72,300. It is proposed by the government to increase this total by 61,230 between the present year and 1912.

TOKYO ELEVATED.—The plan to construct an electric elevated in this city has been extended to include about 31 miles of track with a view to dividing the system into two main lines intersecting each other. One of these lines will connect Shinagawa and Sanja and the other Shunjiku and Honje. The application made by some Japanese capitalists is now being considered.

RAILWAYS AND RAILWAY SUPPLIES

YUNNAN RAILWAY.—The prospect for the completion of this line to Yunnan by the end of 1910 is more promising.

PEKING-HANKOW RAILWAY.—The net proceeds remitted for the quarter ended March 31st, 1909, amounted to Tls. 200,000.

MACAO-CANTON RAILWAY.—The prospect is brighter for the early construction of this line with joint Portuguese and Chinese capital.

DAIREN-SUCHCHIATUN DOUBLE TRACK.—The doubling of this track will be completed this fall and operations will begin by December.

MUKDEN'S NEW STATION.—The work on this new station being constructed by the South Manchuria Railway is being pushed with vigor.

RAILWAY SHADE TREES.—The South Manchuria Company has secured 60,000 shade trees from Japan for distribution among the different stations.

SHANGHAI-HANGCHOW-NINGPO RAILWAY.—The section between Sungking and Fongking was opened on April 14th and completed the Kiangsu section covering a distance of 112 Li.

SIAM NORTHERN RAILWAY.—The construction work on this line has been abandoned and will not be resumed for three or four years or until the line to Paknampo develops sufficient revenue to make it a paying quantity.

CANTON-KOWLOON.—At the laying of the foundation stone of the Canton Railway station, April 8th, by Sir Frederick Lugard, Mr. Grove, the Chief Engineer, stated that he anticipated a through service from Kowloon to Canton by July, 1911.

HONGKONG RAILWAY CONSTRUCTION ACCOUNT.—During the year 1908, $6,378,000 were expended for construction and charged out from the following receipts: Advances from Loan Fund (£330,000), $3,294,693.87; Crown Agents' advances, $1,437,092.62; Drafts on Crown Agents, $290,768.02; Reimbursement due to Public Works Extraordinary, $1,356,136.50.

SOUTH MANCHURIA RAILWAY TRAFFIC REPORT.—The gross tonnage of the freight transported by the South Manchurian Railway during the past six months from October last to March 21st of the present year was 1,542,507 and the total fare of transportation 7,052,765 yen. These figures show an increase of 581,731 tons in freight and 3,179,642 yen in fare, compared with those of the corresponding period of the preceding year.

TRANS-MONGOLIAN LINE.—The Minister of Posts and Telegraphs has made a proposal to construct the extension of the proposed Kalgan-Urga Railway to Maimaicheng and make connections with the Siberian Railway by way of Kiakhta. Russian capitalists are also interested in the construction of a line from Muisovaya a point on the Siberian Railway, to Kiakhta to connect with the proposed Trans-Mongolian line.

PUBLIC WORKS, DOCKS, WHARVES, ETC.

SUNGARI RIVER IMPROVEMENTS.—Dredging plants have been purchased at Tientsin and will begin operations at an early date.

LIAOYANG WATERWORKS.—The estimated outlay for this installation will not exceed yen 20,000 and the work started this month.

YOKOHAMA WATERWORKS.—The municipality is raising a loan of yen 7,000,000 to cover the expense of waterworks expansion.

HOIHOW HARBOR WORKS.—A survey of this harbor is being made with a view to deepening the channel to receive cargo boats freely.

THE CHINESE WATERWORKS COMPANY.—This company has issued a prospectus attracting attention to its flotation at a capital of Tls. 1,250,000.

FRENCH CONCESSION, SHANGHAI.—Provision is made by the budget for the expenditure of Tls. 159,300 for new roads during the fiscal year.

ARTESIAN WELL AT HANKOW.—A well with the capacity of 2,000 cubic meters an hour has been successfully operated by the French Syndicate.

YINKOU WATERWORKS.—The laying of the water mains in the principal street is almost completed and the service pipes are being installed as orders are registered.

DREDGER FOR KUANTAN.—The Federated Malay States dredger Kuantan is to be employed dredging the river at Kuantan where there is great exposure to shipping owing to the dangerous bar during stormy weather.

HAIHO CONSERVANCY FORESTRY DIVISION.—The planting of young trees in the old river bed with the purpose of lining the borders of waterway with trees as far as Tientsin is the latest enterprise of the board.

TAMSUI HARBOR WORKS.—The accumulation of silt in this harbor has become so serious a menace to steamers entering the port that several dredging plants will be engaged deepening the harbor during the fiscal year.

DAIREN ROAD BUILDING.—Out of an appropriation of yen 1,400,000 for the purpose of constructing streets and roads over yen 500,000 have been expended. The total amount named is to cover the work until the end of 1910.

SEKIANG RIVER CONSERVANCY.—The viceroys of Kwantung and Kwangse are preparing joint plans to dredge the Sekiang River and otherwise preserve the waterways from silting, thus preventing serious damage from floods.

LANCHOU-FU BRIDGE.—The construction of this important bridge over the Yellow River is almost complete. Its length is over 800 feet and two of the spans are 160 feet in length. It has a width of 40 feet for cart and passenger traffic.

HAWAIIAN DOCK REVISION.—The size of the large dock for the Naval Base at Pearl Harbor will be reduced from 1,195 to from 600 to 700 feet in view of the shortage of funds provided. The latter size will be big enough to accommodate a 30,000 ton battleship.

LIAO RIVER IMPROVEMENTS.—The improvements here will consist of the immediate building of a weir with lock at the opening and provision made by a diverting wall to prevent the channel suffering from the severe current. The river will also be deepened in several places.

QUARANTINE STATION AT PULAU JEREJAK.—The construction of this institution which will cost about $500,000 has commenced. An extensive sea-wall will be built and a reservoir is contemplated by the plans. The point selected for the site is directly opposite the town of Penang.

PORT OF MIIKE.—This port, which was recently opened by the Mitsui Bussan Kaisha, has a tidal basin newly constructed with an area of 160,000 square yards and a depth of 30 feet minimum. The quay wall is 1,380 feet in length and capable of accommodating steamers of 10,000 tons. The loading machines have a capacity of 5,000 tons of coal a day. The work was extended over a period of five years.

SHIPBUILDING, GENERAL MARINE AND FISHERIES

CHINA MERCHANTS S. N. CO.—The Grand Council proposes placing this company under the control of the Board of Posts and Communications.

PARACELS FISHING INDUSTRY.—The Viceroy of Canton proposes to encourage the industry on these islands and a surveying party is now making a reconnaissance.

SHIPYARD AT PETUNA.—The Governor of Heilungkiang has decided to establish a yard at this point for the purpose of constructing steamers and docking them as well as junks for the carrying of coal from the Kanho coal mine.

PORT ARTHUR HERRING FISHERIES.—Japanese and Chinese fishermen have established a village about five miles north-east of Port Arthur and are engaged in catching herring and bonito that abound there in large quantities.

CHINESE WHALING COMBINE.—A trust designed to control the whaling industry in Japan has been organized by the amalgamation of the four leading companies with a capital of yen 7,000,000. The combine will be known as the Meiji Suisan Kaisha.

KIANGNAN DOCK EXTENSION.—The Commissioners for Navy Reorganization of China's Navy have decided to extend the Kiangnan Dock at Shanghai as they are most conveniently located for the docking of vessels of the Pehyang and Nanyang squadron.

MOTOR LAUNCH BUILT AT SHANGHAI.—The motor vessel Asiatic, erected by the New Engineering and Shipbuilding Works at Shanghai, was launched last month. It was built for the Asiatic Petroleum Company for the Yangtsze service. It is 164 feet over all; breadth 25 feet; a loaded draught of 5 feet, 6 in., and a capacity of 340 tons dead weight. Her speed is 6.2 knots. She is equipped with three 40 h.p. petroleum motors.

MINES, MINERALS AND THE METAL TRADE

ONODA CEMENT FACTORY.—The factory of this company at Choushuitzu has begun operations.

KIRIN COAL MINE.—The discovery has been reported of a large seam or coal at Suifen Ting. The Mining Bureau is making an investigation.

FORMOSAN COAL PRODUCT.—The value of the coal product of Formosa reached approximately yen 500,000, almost doubling the output of the previous year.

AMBER QUARRY IN MANCHURIA.—The discovery of an amber deposit near Hsinmintun has been reported at Dalny, but this has not been officially confirmed.

YENTAI COAL MINES.—The work of installing equipment in these mines promises to be completed by the end of the year when a daily output of 300 tons may be expected.

POWLETT COAL FIELDS.—The discovery of coal in Victoria, Australia, has been investigated and it develops that the quantity available will exceed 20,000,000 tons.

RUSSIAN OIL IN MANCHURIA.—The imports amounted to over 340,000 cases during the year 1908. Russia's total trade in the Far East for the year amounted to approximately 1,000,000 cases.

PAULO LAUT COAL CO.—This company has now 32 Europeans employed with a force of 1,200 laborers. Coal is quoted 17s. Its value as a steam producer is about 80 per cent of that of Welsh coal.

CHINESE COAL FOR JAPAN.—The *P. & I. Times* announces that a shipment of 3,000 tons of coal was made to Japan by the Chinese Engineering and Mining Co. through their agents as a trial shipment.

KYUSHU COLLIERY AND STEAMSHIP COMPANY.—According to the latest reports this company is now prepared to open up their coal fields in Hizen province where 5,000,000 tsuba in area is under their control.

PYENG YANG COAL MINES.—The output of the Government mines at this point is approximately 4,000 tons a month and it is its purpose to increase the output to 5,000 next year. The quality is said to be superior to Japanese coal and sells for yen 6.50 to $7.00 a ton.

YANGTSZE ENGINEERING WORKS INAUGURATED.—The ceremony of opening this new institution took place April 21st. It represents one of the most important engineering developments in Hankow for many years. The plant covers an area of 30 acres and includes equipment and machinery for the construction of steel bridges as a specialty. The motive power is electricity.

THE MURORAN STEEL WORKS.—Considerable progress has been made, in spite of a severe winter, with the Muroran Works of the Nihon Sei-ko-sho, or Japan Steel Works; the Company which has been formed by the two well-known English firms of Vickers Sons and Maxim, Ltd., and Sir W. G. Armstrong Whitworth & Co. in conjunction with the Hokkiado Coal Co. to manufacture war material in Japan according to the systems of the two English Companies. It is expected that work will be commenced in the gun machinery shops during the summer, but the steel melting and forging shops will take some time longer before they are ready to start work. In the meantime the Japanese Government have placed with the Armstrong and Vickers Companies the order for the material necessary for the two large battleships of the *Dreadnought* type, now being built in Japan.

FINANCIAL AND MISCELLANEOUS

SIBERIA COLONIZATION.—According to reports, the number of immigrants expected to settle in Siberia this year will exceed 900,000.

FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.—This organization will hold its first annual meeting in March, 1910, at Manila and Baguio.

TIEHLING PRODUCE AND MONEY EXCHANGE.—This exchange was opened last month. The transactions will be on a cash basis and no fees are charged.

MONGOLIAN FURS.—Russian buyers are reported to have contracted for 400,000 roubles worth of wool and furs for delivery this year with Mongolian dealers.

COPRA INDUSTRY IN WELLESLEY.—The Prye Rubber Cocoanut Plantations Co. was recently formed with a capital of £90,000 to operate in the Province of Wellesley.

ALASKA, YUKON AND PACIFIC EXHIBITION.—This exhibition will be held from June 1st, 1909, to October 16th, inclusive, and many exhibits from the Far East have been arranged for.

FORMOSAN SUGAR INDUSTRY.—The new installations of sugar mills will increase the production about 7,000 tons daily and it is expected that the value of the sugar crop will exceed yen 200,000,000.

KEDAH RUBBER.—The first rubber company since the signing of the Anglo-Siamese treaty to develop the industry in Kedah has been organized with a capital of $200,000 according to the *Penang Gazette*.

RUSSIAN CIGARETTES IN MANCHURIA.—The cigarette factories established by Russian capitalists along the border of the Japanese zone in Southern Manchuria are reported to be doing an extensive business.

RUBBER PLANTATIONS INVESTMENT TRUST.—This company has been formed with a capital stock of £500,000 and has for its purpose the making of advances on products, amalgamation of groups of estates, loans on shares and other securities, and underwriting new issues. The company is a most desirable institution for the encouragement of the many industries of Malaya.

*LONDON, ENGLAND, METAL MARKET

April 1909.

	£	s.	d.		£	s.	d.
COPPER							
Tough cake and Ingot	60	10	0	..	61	0	0
Best Selected	61	0	0	..	61	10	0
Electrolytic	61	0	0	..	61	10	0
Sheets and sheathing	71	0	0	..	—		
Flat bottoms	74	0	0	..	—		
STANDARD †Cash	57	6	3	..	57	7	6
STANDARD †Three Months	57	18	9	..	58	0	0
Copper tubes, seamless per lb.	0	0	9½	..	—		
Lake	61	10	0	..	62	0	0
* Less 3½ per cent. † Net.							
ALLOYS.							
BRASS: Wire	0	0	6½	..	—		
" Tubes (solid drawn)	0	0	7⅝	..	—		
" Sheets	0	0	6½	..	—		
TIN.							
English ingots, f. o. b.	133	10	0	..	134	10	0
" bars	134	10	0	..	135	10	0
" refined	135	10	0	..	136	10	0
Straits... Cash	133	15	0	..	133	17	6
Straits... Three months	134	15	0	..	135	0	0
Australian spot	133	15	0	..	134	5	0
Banka (in Holland) Cash	137	1	3	..	—		
Banka (in Holland) Three months	137	10	0	..	—		
LEAD.							
Spanish or soft foreign	13	12	6	..	13	13	9
English pig, common	13	17	6	..	14	0	0
" L. B	14	7	6	..	—		
" sheet and bar lead	14	17	6	..	—		
" pipe	15	7	6	..	—		
" red	16	7	6	..	—		
" white	18	0	0	..	—		
" patent shot	16	17	6	..	—		
SPELTER.							
Silesian ordinary brands	21	5	0	..	21	7	6
" special brands	21	15	0	..	22	0	0
English Swansea	21	10	0	..	22	0	0
Sheet zinc	24	15	0	..	—		
ANTIMONY.							
Antimony	29	10	0	..	31	10	0
" Crude	18	10	0	..	14	10	0
" Ore (basis 50%)	7	10	0	..	8	10	0
QUICKSILVER.							
Flasks, 75 lbs. warrants	8	7	6	..	—		

MANGANESE.

Ore, c.i.f., U. K. ports.	Per unit.*				Per unit.*
1st quality, 50 per cent. and upwards	0	0	9	..	—
2nd quality, 47 per cent. to 50 per cent.	0	0	8	..	—
3rd quality, 40 per cent. to 47 per cent	0	0	7	..	—

* Unit corresponds to 1 per cent.

ALUMINIUM.	Per ton.
98-99 per cent.	£60 to £65

NICKEL.	Per ton.				Per ton.		
98-99 per cent. guaranteed	170	0	0	..	175	0	0

PLATINUM.

Per oz. Troy, 100s.; nominal and subject to negotiation.

**Mining Journal.*

CURRENT NEW YORK WHOLESALE PRICES OF METALS, MINERALS, CHEMICALS, ETC.

Selected from the Engineering and Mining Journal

		U. S. Currency.
ABRASIVES.—		
Bort, good drill quality	carat	$ 85.00
Carborundum, grains	lb	.10-.17
Corundum	"	.07-.10
Emery, grain	"	.035-.045
Pumice Stone, American powdered	100 lbs	1.60-2.00
ACIDS.—		
Hydrochloric 20°	lb	1.25-1.50
Nitric, 38°	"	4.25-4.625
Sulphuric, 66° bulk	ton	18.00
ALUMINUM, Sulphate Com'l	lb	1.10-1.75
ANTIMONY, needle	"	.05-.06
ARSENIC, white	"	.05-.055
red	"	.07½-.70
ASPHALTUM.—		
Trinidad	ton	2.00-30.04
California	"	21.00-27.00
BLEACHING POWDER, 35%	100 lbs	1.25-1.00
BLUE VITRIOL	lb	5.00
BONE ASH	"	.02½-.04
BORAX	"	.04½-.05½
*CAPS detonating	M	-7.50
CEMENT.—		
Portland, American	500 lbs. bbl	1.55-1.60
Foreign	" " "	2.25-2.90
Rosendale	300 " "	.85
*Green Island	375 " "	2.75
*Alsen		3.00
CLAY, CHINA.—		
American common	lg. ton	8.50-9.00
Foreign	"	10.00-17.50
***COALS.—**		
Batan, at Mines	ton	3.00
Australian	"	5.50
COPPER	lb	.13-.14
*DYNAMITE 40%	"	.20
FELDSPAR ground best	sh. ton	10.50-15.00
FIRE BRICK, American	M	30.00-40.00
Imported	"	30.00-45.00
FIRE CLAY, St. Louis Mill	ton	2.50
FUSE—Blasting	1,000 ft	7.50
GRAPHITE—Ceylon, lump	lb	.04-.10
Large lump	lb	.07-.10
GYPSUM—Fertilizer	sh ton	7.00
Powdered	sh. ton	12.00-20.00
LEAD	lb	-.04
MAGNESITE-Greece, crude, 95%	lg. ton.	8.00-10.00
Bricks, domes	per M	160-200
MANGANESE, Ore, 80-85%	sh. ton	20.00-50.00
MERCURY, export flask	75 lbs	36.00-39.00
PAINTS AND COLORS.—		
Litharge American P'w'd	lb	.06½-.06¾
Ochre, Am. Com	sh. ton	8.50-9.00
Paris green, pure, bulk	lb	.26
Turpentine, spirits, bbl	gal	.44½-.4
White lead, Am. dry	lb	.05¾-.0
Am. in oil	"	.06½-.06
Zinc, white, Am. extra dry	"	.05¾-.05
PHOSPHATES, Acid	per unit	.65-.7
Florida hard rock	lg. ton	10.25-10.5
Land pebble 68%	"	5.25-5.5
POTASSIUM Cyanide (98-99%)	lb	.18-.19
PLATINUM	oz	28.00
PLATINUM, Scrap	oz	17.00
SPELTER	lb	.045-.046
NICKEL Small lots	lb	.50-.60
*POWDER, black blasting A	lb	.15
*Judson	"	.14½
Pyrite, Domestic Non-arsenical, Lump	unit	.11-.11½
Imported non-arsenical lump	"	.12½-.13
Imported, arsenical "	"	.12-.12½
SALTPETER crude	100 lbs	4.50-5.00
SILICA, Lump quartz	lg. ton	5.00-6.00
Ground quartz, ordinary	"	13.00-15.00
Glass sand, ordinary	"	2.7
SILVER	oz	.55½-.55
SODIUM cyanide (100% KCN)	lb	.1
*STEEL, octagon drill	lb	
SULPHUR, Louisiana prime	lg. ton	22.
Roll	100 lbs	1.85-2.
Flowers sublimed	"	2.20-2.
TALC—Domestic	sh. ton	15.00-25.
Italian, best	"	35.00-40.
TIN	lb	.9½
ZINC, Sheet	100 lb	7.
Dust	lb	.05¾-.06

*Manila quotation.

HEMP STATISTICS, 28th APRIL, 1909.

(Courtesy of C. S. NICHOLSON, *Secretary, Manila Chamber of Commerce.)*

EXPORT OF HEMP, APRIL, 1909.

Date	*Vessel*	*London*	*L'pool*	*Atlantic U.S.*	*Pacific East & California*	*Continent.*	*Australia*	*Other Pts.*	*Total Bales*
1909		68,606	37,597	116,513	15,645	16,284	3,695	8,782	267,122
April 3	Banca	2,300	.....	.....	.....	2,850	.....	.....	5,150
" 2	Zafiro	4,550	.....	.....	.....	950	.....	700	6,200
" "	Yuensang	.....	.....	.....	.....	175	.....	300	475
" 1	Eastern	.....	.....	.....	.....	.....	.....	150	150
" "	Kaifong ..... Cebu	50	25	.....	.....	.....	.....	.....	75
" 6	Kaifong	350	.....	.....	.....	.....	.....	.....	350
" 7	Flintshire	4,570	1,450	.....	.....	1,872	.....	.....	7,892
" 2	Taming ..... Cebu	50	.....	.....	.....	285	.....	.....	335
" 4	Kumeric	.....	.....	.....	5,170	.....	.....	219	5,389
" 10	Clan MacInnes	.....	.....	.....	2,122	.....	.....	.....	2,122
" 8	Yawata Maru	.....	.....	.....	.....	.....	.....	222	222
" "	Rubi	.....	.....	.....	.....	.....	.....	265	265
" 13	Tean	590	.....	.....	.....	350	.....	.....	940
" "	Changhsa	.....	.....	.....	.....	.....	468	.....	468
" 16	Indrasamha	.....	.....	6,365	.....	.....	.....	.....	6,365
" "	Yuensang	.....	.....	.....	.....	250	.....	400	650
" 17	Zafiro	.....	.....	.....	.....	.....	.....	272	272
" "	Aymeric ..... Cebu	115	.....	.....	83	.....	.....	.....	198
" 19	Kumano Maru	.....	.....	.....	.....	.....	675	.....	675
" 20	C. Lopez & Lopez	1,563	2,875	.....	.....	64	.....	.....	4,502
" "	Cranley ..... Cebu	750	.....	.....	.....	.....	.....	.....	750
" "	Aymeric	.....	.....	.....	274	.....	.....	2	276
" 22	Minnesota	.....	.....	.....	1,825	.....	.....	107	1,932
" "	Kaifong ..... Cebu	.....	.....	.....	.....	200	.....	50	250
" 23	Tydeus ..... Cebu	4,383	4,172	.....	.....	850	.....	.....	9,405
" "	Inveric	.....	.....	.....	.....	.....	.....	400	400
" "	Loongsang	.....	.....	.....	.....	.....	.....	100	100
" 24	Indrasamha ..Cebu	.....	.....	13,535	.....	.....	.....	.....	13,535
" "	Rubi	.....	.....	.....	.....	.....	.....	975	975
" "	Prinz Sigismund	.....	.....	.....	.....	.....	100	.....	100
" 26	Lowther Castle	.....	.....	14,338	.....	.....	.....	.....	14,338
" 30	Yuensang	.....	.....	.....	.....	.....	.....	150	150
		87,877	46,119	150,751	25,119	24,130	4,938	13,094	352,028

FAR EASTERN STOCKS AND QUOTATIONS

Courtesy of Messrs. Kadoorie & Co., Hongkong, May, 1909.

STOCK.	WHEN ESTABLISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND.	Approximate Yield per cent. per annum at Present Quotation.*	CLOSING QUOTATIONS.
BANKS.											
Hongkong & Shanghai Banking Corporation	1865	$15,000,000	120,000	$125	$125	s £1,500,000; g $14,500,000; i $250,000	$2,006,234	31-12-08	Final of £2-and bonus of 5|- @ ex 1|8 ½ = $26.024, making in all $47.966 for 1908	5¼	$950 sales; £89-10
National Bank of China, Ld.	1891	£699,475	10) 99,925	£7	£6	c £4,099; $150,000	$10,223	31-12-07	$2 (London 3|6) for 1903	....	$51
MARINE INSURANCES.											
Canton Insurance Office, Ld.	1881	$2,500,000	10,000	$250	$50	$1,560,000; j $232,757; u $411,990	Nil.	31-12-07	$14 for 1907	7½	$188 buyers
North China Insurance Co., Ld.	1863	£150,000	10,000	£15	£5	g £125,000; s Tls. 150,000; u Tls. 303,747; f Tls. 118,277	Tls. 160,512	30-6-08	Final of 7|6 making 15|- for 1907	5½	Tls. 105
Union Ins. Society of Canton, Ld.	1867	$3,100,000	12,400	$250	$100	s $3,000,000; g £90,000; f $192,248; j £105,249; u $682,609	$2,464,901	31-12-07	Final of $17 making $47 for 1907, and interim of $30 for account 1908	6	$805 buyers
Yangtsze Ins. Association, Ld.	1862	$1,200,000	12,000	$100	$60	$1,000,000; j $294,405; f $199,234	$707,637	31-12-08	$12 and bonus $3 for 1907	7½	$235 sales
FIRE INSURANCES.											
China Fire Ins. Co., Ld.	1870	$2,000,000	20,000	$100	$20	$1,000,000; x $438,668; f $13,802	$375,314	31-12-08	$6 and bonus $2 for 1907	7½	$106 buyers
Hongkong Fire Ins. Co., Ld.	1868	$2,000,000	8,000	$250	$50	$1,438,173	$368,711	31-12-08	$27 for 1907	8½	$337½ buyers
SHIPPING.											
China & Manila Steamship Co., Ld.	1882	$750,000	1) 30,000	$25	$25		Dr. $21,538	31-12-08	$1 for 1906	....	$12 sellers
Douglas Steamship Co., Ld.	1883	$1,000,000	20,000	$50	$50	$264,638; s $99,067	Nil.	30-6-08	$2½ for year ending 30-6-08	7	$36 sellers
Hongkong, Canton & Macao Steamboat Co., Ld.	1865	$1,200,000	80,000	$15	$15	e $250,000; d. i. $607,500; f $79,428; $25,344	$20,279	30-12-08	Final of $1½ making in all $2½ for 1908	8½	$30½ buyers
Indo-China Steam Navigation Co., Ld.	1882 m	£600,000	2) 60,000	£5	£5	£10,000; i £240,000	£13,700	31-12-07	6|- for 1907 on pref. shares only at ex. 1|9 11|6, $3.154	4	$51 buyers
Do. (Preferred)			2) 60,000								$53 buyers
Do. Do. (Deferred)											
Shanghai Tug & Lighter Co., Ld.	1903	Tls. 1,500,000	20,000	Tls. 50	Tls. 50	Tls. 75,000	Tls. 14,510	31-12-08	Final of Tls. 1½ making Tls. 3½ for 1908	7½	Tls. 51 sales
Do. Preference			10,000							7	Tls. 53 sales
"Shell" Transport & Trading Co., Ld.	1898	£ 2,000,000	2,000,000	£1	£1	£720,000; i £100,000	£63,817	31-12-07	Second Interim of 1/- for a|c 1908	....	58|6- buyers
"Star" Ferry Co., Ld.	1898	$200,000	10,000	$10	$10	$65,000; i $47,221	$98	30-4-08	$1.00 / 50 cts. for year ended 30-4-08	4 / 3½	$25 buyers / $15
	1900		10,000	$10	$5						
Taku Tug & Lighter Co., Ld.	....	Tls. 1,500,000	12) 30,000	Tls. 50	Tls. 50	c Tls. 98,000; d Tls. 481,479; e Tls. 44,100; i Tls. 81,200; q Tls. 7,000	Tls. 2,215	31-12-08	Final of Tls. 1½ making Tls. 2½ for 1908	11	Tls. 45 sales
REFINERIES.											
China Sugar Refining Co., Ld.	1878	$2,000,000	20,000	$100	$100	e $350,000; r $56,848	Dr. $5858	31-12-08	$5 for year ending 31-12-08	3½	$137½
Luzon Sugar Refining Co., Ld.	1882	$700,000	7,000	$100	$100	none	Dr. $135,893	31-12-08	$3 for 1897	....	$16
Perak Sugar Cultivation Co., Ld.	....	Tls. 350,000	7,000	Tls. 50	Tls. 50	Tls. 100,000	Tls. 9,173	31-8-07	Tls. 3½ for year ending 31-8-08	....	Tls. 132½
MINING.											
Chinese Engineering & Mining Co., Ld.	1901	£1,000,000	1,000,000	£1	£1	d £175,000; h £12,289	£11,556	28-2-07	Final of 1|6 (Coupon No. 11) for year ending 29-2-08	7	Tls. 18 sales
Raub Australian Gold Mining Co., Ld	1892	£200,000	150,000	£1	18-10	£4,873	Dr. £2,191	31-3-08	No. 12 of 1|- = 48 cents	....	$8
			50,000	£1	£1						
DOCKS, WHARVES AND GODOWNS.											
Fenwick (Geo.), & Co., Ld.	1889	$450,000	z 18,000	$25	$25	$42,986; $53,601	Dr $7,421	31-12-08	$1¾ for year ending 31-12-06	....	$12
Hongkong & Kowloon Wharf & Godown Co., Ld.	1886	$3,000,000	60,000	$50	$50	$550,000; t $26,806; z $40,000	$30,102	31-12-08	Final of $1½ making $3½ for 1907	....	$55 buyers
Hongkong & Whampoa Dock Co., Ld.	1866	$2,500,000	50,000	$50	$50	i $97,199; v $200,000	$387,078	31-12-08	Final of $4 making $8 for 1908	10	$79 sellers
Shanghai Dock & Engin'g Co., Ld.	1906	Tls. 5,570,000	13) 55,700	Tls. 100	Tls. 100	Tls. 1,000,000	Tls. 33,742	30-4-08	Interim of Tls. 2½ for month ending 31-10-1908	6	Tls. 87 buyers
Shanghai & Hongkew Wharf Co., Ld.	1902	Tls. 3,600,000	36,000	Tls. 100	Tls. 100	b Tls. 697,257; r Tls. 50,000; e Tls. 125,000	Tls. 22,818	31-12-08	Final of Tls. 6 making Tls. 10 for 1908	6	Tls. 168 sellers
LANDS, HOTELS AND BUILDINGS.											
Anglo-French Land Investment Co., Ld.	1906	Tls. 2,500,000	3) 25,000	Tls. 100	Tls. 100	Tls. 25,000	Tls. 4,314	29-2-09	Tls. 6 for year ending 29-2-09	....	Tls. 101 buyers
Astor House Hotel Co., Ld.	1901	$750,000	4) 30,000	$25	$25	$30,000	Dr. $4,200	30-6-08	$2½ for year ending 30-6-07	6	$20½ sales
Astor House Hotel, Ld. (Tientsin)	....	Tls. 200,000	4,000	Tls. 50	Tls. 50	Tls. 35,000; e Tls. 10,000	Tls. 1,013	28-2-0	20 per cent. for 1906	....	Tls. 60
Central Stores, Ld.	....	$751,845	16) 50,123	$15	$15	n. $1,000	$24,641	31-12-08	$1.20 on old & 60 cts. on first new issue	....	$18½ buyers
Hongkong Hotel Co., Ld.	1866	$600,000	12,000	$50	$50	$648,975; r $13,912	$295	31-12-08	Final of $3 making $6 1908	7½	$85 buyers
Hongkong Land Investment & Agency Co., Ld.	1889	$5,000,000	50,000	$100	$100	e $250,000	$26,475	31-12-08	Final of $3½ making $7 for 1908	6¾	$90 buyers
Humphreys' Estate & Finance Co., Ld.	1887	$1,500,000	150,000	$10	$10	i $222,172; 20) $43,261	$5,486	31-12-08	60 cents for 1908	7½	$9 buyers
Kowloon Land & Bldg. Co., Ld.	1889	$300,000	6,000	$50	$30	none	$278	31-12-08	$1½ for 1908	5	$30
Shanghai Land Investment Co., Ld.	1888	Tls. 3,900,000	78,000	Tls. 50	Tls. 50	Tls. 1,523,045; e Tls. 300,000	Tls. 142,404	31-12-08	Final of Tls. 3 & bonus of Tls. 2 making Tls. 8 for 1908	7	Tls. 118 buyers
Tientsin Land Investment Co., Ld.	1902	Tls. 772,600	7,726	Tls. 100	Tls. 100	i Tls. 75,185	Tls. 129	31-12-08	Final of Tls. 2 making Tls. 5 for 1908	7	Tls. 85 buyers
West Point Bldg. Co., Ld.	1889	$625,000	12,500	$50	$50	none	$1,968	31-12-08	Final of $2 making $4 for 1908	9	$44 buyers
COTTON MILLS.											
Ewo Cotton Spinning & Weaving Co., Ld.	1895	Tls. 1,000,000	5) 20,000	Tls. 50	Tls. 50	Tls. 150,000; Tls. 45,939	Tls. 8,820	31-10-08	Tls. 5 for year ended 31-10-08	4½	Tls. 123 sellers
Hongkong Cotton Spinning, Weaving & Dyeing Co., Ld.	1901	$1,250,000	125,000	$10	$10	e $20,000	$9,553	31-7-08	50 cents for year ending 31-7-08	6	$8½ buyers

FAR EASTERN STOCKS AND QUOTATIONS—(CONTINUED.)

STOCK.	WHEN ESTABLISHED	CAPITAL.	NO. OF SHARES.	VALUE.	PAID UP.	RESERVE	AT WORKING ACCOUNT.	DATE.	LAST DIVIDEND.	Approximate Yield per cent. per annum at Present Quotation.	CLOSING QUOTATIONS
International Cotton Manufacturing Co., Ld.	1895	Tls. 750,000	6) 10,000	Tls. 75	Tls. 75	Tls. 175,000	Tls. 8,372	30-9-08	Tls. 6 for year end. 30-9-06 (8%).	....	Tls. 91 buyers
Laou-kung-mow Cotton Spinning & Weaving Co., Ld.	1895	Tls. 800,000	8,000	Tls. 100	Tls. 100	none	Tls. 4,829	31-12-08	Tls. 4 for 1908	....	Tls. 111 buyers
Soy Chee Cotton Spinning Co., Ld	1895	Tls. 1,000,000	2,000	Tls. 500	Tls. 500	*l* Tls. 31,172	Tls. 15,911	31-12-08	Tls. 50 for 1906	....	Tls. 410 sellers
MISCELLANEOUS.											
Bell's Asbestos Eastern Agency, Ld.	1895	£5,377.10s	11) 8,604	12/6	12/6	£1,500	£648	31-12-08	1s. 10½d. for 1907=$1.037	10	$10½ sales
China-Borneo Co., Ld.	1903	$720,000	8) 60,000	$12	$12	$40,000	Nil.	31-12-08	$1.20 for 1908	10	$12 buyers
China Light & Power Co., Ld.	1901	$550,000	50,000	$10	$10	none	$61,138	28-2-07	60 cents for year ending 28-2-06	8½	$5
Do. do. Special Shares	1907		17)50,000	$1	$1						
China Provident Loan & Mortgage Co., Ld.	1898	*a* $1,250,000	7) 125,000	$10	$10	$100,000	$3,407	31-12-08	80 cents for 1908	....	$9½ sellers
Dairy Farm Co., Ld.	1896	$300,000	40,000	$7½	$6	*i* 10,000 / $8,000	$48	31-7-08	$1.30 for year ending 31-7-08	7	$17
Green Island Cement Co., Ld.	1889	$4,000,000	400,000	$10	$10	$13,000	$3,756	31-12-08	Final of 50 cts. making 90 cts. for 1908	10½	$8.90 sales
H. Price & Co., Ld.	1907	$120,000	19) 15.000	$10	$10	$5,000	$251	31-12-07	75 cts. for 9 months endg. 31-12-07	8	$12
Hall & Holtz, Ld.	....	$420,000	14) 21,000	$20	$20	$186,000	$8,957	28-2-08	$2 for year ending 28-2-08	8½	$23 buyers
Hongkong Electric Co., Ld.	1889	$600,000	60,000	$10	$10	none	$5,195	29-2-09	$1.00 and bonus 20 cents for year ending 29-2-09	6½	$18½ b. ex. div.
Hongkong Ice Co., Ld.	1881	$125,000	5,000	$25	$25	*k* $150,000	$7,616	31-12-08	Final of $15 per share making in all $19 for 1908	12½	$155 sellers
Hongkong Rope Manufacturing Co., Ld.	1883	$600,000	$60,000	$10	$10	$20.000	$8,790	31-12-08	Final of $1 per share making $2 for 1908	8½	$24 sales
Maatschappij tot Mijn-, Bosch- en Landbouwexploitatie in Langkat	1902	Gs. 2,500,000	25,000	Glds. 100	Glds. 100	Tls. 547,500 / *i* Tls. 63,914 / 21 Tls. 547,500	Tls. 316,682	31-10-08	First quarterly dividend of Tls. 12½ for ⅔ 1909	4½	Tls. 1065 buyers
Peak Tramways Co., Ld.	1907	$750,000	25,000	$10	$10	$5,000	$ 7,471	30-4-08	80 cents on fully paid shares & 6 cents on $1 paid shares for year ending 30-4-08	6	$14
Do. (New)			50,000	$10	$1					4	$2
Philippine Co., Ld.	1904	$750,000	75,000	$10	$10	none	Ps. 18.640	31-12-08	None	....	$8
Shanghai Gas Co., Ld.	1903	Tls. 800,000	24,000	Tls. 50	Tls. 50	*d* Tls. 100,000	Tls. 6,603	31-12 07	Interim of 7% Tls. 3½ for ⅔ 1908	6¾	Tls. 115 sellers
Shanghai-Sumatra Tobacco Co., Ld.	1902	Tls. 600,000	9) 30,000	Tls. 20	Tls. 20	Tls. 24,820 / *w* Tls. 75,000	Tls. 5,250	31-10-08	Final of Tls. 5 making Tls. 8 for 1908	6	Tls. 132½ sellers
Shanghai Waterworks Co., Ld.	1881	£327,000	16,350	£20	£20	Tls. 220,000	Tls. 23,038	31-12-08	Final of 30/- making 45/- for 1908	....	Tls. 415 buyers
South China Morning Post, Ld.	1903	$150,000	6,000	$25	$25	none	*Dr.* $56,602	31-8-08	None	....	$24
Steam Laundry Co., Ld.	1902	$100,000	20,000	$5	$5	none	$236	31-5-08	40 cents for year ending 30-5-08	7½	$5
Tientsin Waterworks Co., Ld.	1901	Tls. 200.000	2,000	Tls. 100	Tls. 100	Tls. 15,259 / *e* Tls. 4,000	Tls. 201	30-4-07	Tls. 6½ for year ending 30-4-07	....	Tls. 94 buyers
Union Waterboat Co., Ltd.	1905	$500,000	15) 50,000	$10	$10	none	$172	31-12-08	60 cents for year-end, 31-12-1908	5	$10½
United Asbestos Oriental Agency, Ld.	1896	$100,000	10,000	$10	$4	$35,000	$1,360	31-5-07	80 cts. on 9,900 ord shares & $19.80 on 100 founders shares for year ending 31-5-07	6½	$13 buyers
Watson (A. S.) & Co., Ld.	1886	$900,000	90,000	$10	$10	$300,000 / *e* $25,000	$6,438	31-12-07	Interim of 30 cents ⅔ 1908	6¾	$9 sales
Weismann Limited	1904	$17,500	175	$100	$100	$6,700	$13	31-7-07	10 per cent for year endg. 31.7.07.	....	$150
William Powell, Ld.	1901	$105,000	15,000	$7	$7	none	$3.95	30-6-08	Final of 30 cents making 80 cents for year ending June 30th 1906	....	$2½ buyers

LOANS AND DEBENTURES.	AGENTS FOR THE LOAN.	AMOUNT OF LOAN.	PAR VALUE.	OUTSTANDING BONDS.	WHEN PAYABLE.	CLOSING QUOTATIONS.	
China Government, 7 per cent. Silver Loan 1886 E.	Hongkong & Shanghai Banking Corporation.	Tls. 767,200	Tls. 250	1914	Mar. 31st and Sept. 30th each year until Mar. 31st, 1917	par.	Plus interest
Hongkong Hotel Company, Ltd., 6 per cent. Mortgage Debentures of 1899 ‡		$500,000	$500	§ all	Half yearly, June 30th and December 31st	par	
Shanghai & Hongkew Wharf Company, Ltd., 6 per cent. Debentures of 1902		Tls. 543,900	Tls. 100	.....	Half yearly, June 30th and December 31st	Tls. 103½	
Astor House Hotel Company, Ltd., 8 per cent. Debentures of 1903		Tls. 500,000	Tls. 100	.....	Half yearly, January 1st and July 1st	102½	
Chinese Engineering & Mining Co., Ltd., 6 per cent. Debentures of 1903 †	.....	£500,000	¶	£431,960	Half yearly, June 30th and December 31st	par.	
International Cotton Manufacturing Co., Ltd. 7% Debentures of 1901	Russo Chinese Bank	Tls. 500,000	Tls. 100	||	Half yearly, March 31st and Sept. 30th	Tls. 97½.	
China Light and Power Co., Ltd. 6% Debentures of 1907 ***	.....	$500,000	$100	.....	Half yearly, June 30th and December 31st.	par.	

a Authorized capital $2,000,000.
b Building Reserve Account.
c Capital Reserve Fund.
d Depreciation Fund.
e Equalization of Dividend Fund.
f Exchange and Investment Fluctuation Account.
g Gold Reserve Fund
h Exchange Reserve Account.
i Insurance Fund.
j Reinsurance Fund.
k Contingencies Account.
l Legal Reserve Fund.
m Authorized Capital
n Sinking Fund.
o Raw Sugar Reserve Account.
p Premium on New Issue.
q Boiler Repairs and Renewals Account
r Repairs and Renewals Account.
s Silver Reserve Fund.
t Depreciation and Repair Account
u Underwriting Suspense Account.
v Special account
w Special Works Fund.
x Extra Reserve Fund.
y 72,560 owned by the Company.
z 7,200 shares unissued.
1 4,000 shares unissued.
2 First issue of 60,000 of which 10,411 unallotted.
3 5,000 shares unissued.
4 4,480 shares unissued.
5 5,000 shares unallotted.
6 1,616 shares unallotted.
7 75,000 shares unissued.
8 14,000 shares unissued.
9 17,000 shares unissued.
10 40,453 shares actually issued.
11 7,688 shares actually issued.
12 4,200 shares unissued.
13 500 shares unissued.
14 399 shares unissued.
15 22,277 shares unissued.
16 10,000 shares unissued.
17 Special shares are entitled to half of the profits.
18 Capital contributed by Chinese Government Kuping Tls. 5,000,000.
19 12,000 issued only.
20 Typhoon and Floods Insurance Fund
21 Special Cash Reserve.
* Based on last year's dividend.
** Based on present dividend.
|| Only Tls. 134.000 taken up.
§ 216 held by the Company.
¶ In certificates of £20 and £100.
‡ Redeemable in 10 years.
† Redeemable at par at rate of £10,000 per annum from 31st December 1903 to 31st December 95.
*** Redeemable at par on 30th June, 1915.
Dr. Deficit.

ADDITIONAL SHANGHAI SHARE QUOTATIONS

STOCK	CLOSING QUOTATIONS	HIGHEST AND LOWEST PRICES DURING THE WEEK	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	LAST DIVIDEND	WHEN PAID
Oriental Consolidated Mining Co., Ltd	27s. 6d.		G. $5,000,000	500,000	G. $10	G. $10	none	3rd Div. of Gold cents 50 making gold $1½ for year ended 30th June 1907.	Dec. 31, 1908
Kiang pei-ting Coal & Iron Mine Co., Ltd	Tls. 50		Tls. 500,000	5,000	Tls. 100	Tls. 50	—	First year	—
Vulcan Iron Works, Limited	Tls. 400		Tls. 500,000	1,000	Tls. 500	Tls. 500	—	Tls. 50 for year ended 31.8.06	Nov. 1, 1906
Yangtsze Wharf & Godown Co., Limited	Tls. 125 nominal		Tls. 250,000	2,500	Tls. 100	Tls. 100	Tls. 50,000	Tls. 15 for 1908	April 1, 1909
Wei-hai-wei Land & Building Co., Limited	Tls. 10 nominal		Tls. 91,850	3,674	Tls. 25	Tls. 25	—	—	—
Union Estate & Investment Co., Limited	Y. 105 sales		Y. 1,000,000	10,000	Y. 100	Y. 100	—	First year	—
Grand Hotel, Limited	Y. 100 sellers		Y. 500,000	5,000	Y. 100	Y. 100	—	Interim Y. 5 for ½ year	Dec. 31, 1908
Hotel des Colonies Company, Limited	Tls. 9 sellers		Tls. 112,500	9,000	Tls. 12½	Tls. 12½	Tls. 29,783	6% for 1907	May 29, 1908
Kalee, Limited	$100 nominal		$400,000	4,000	$100	$100	—	$5 for 1907	May 22, 1908
Anglo-German Brewing Co., Limited	$85 buyers		$100,000	4,000	$100	$100	none	$7 for 1907	Mar. 12, 1908
Butler Tile Works, Limited	Tls. 50 nominal		Tls. 60,000	1,200	Tls. 50	Tls. 50	—	Tls. 3 for year ending 31.3.07	May 29, 1907
Major Bros., Limited	Tls. 40 sellers		Tls. 300,000	6,000	Tls. 50	Tls. 50	—	—	—
Oriental Ice Company, Limited	Tls. 50		Tls. 130,000	2,600	Tls. 50	Tls. 50	—	First year	—
Scharffs Oil and Bone Mills, Ltd.	Tls. 50		Tls. 200,000	4,000	Tls. 50	Tls. 50	—	First year	—
Shanghai Ice Company, Limited	Tls. 13 sales		Tls. 200,000	8,000	Tls. 25		—	3% for 1907	Mar. 14, 1908
Shanghai Oil Co., Limited	Tls. 25		Tls. 175,000	7,000	Tls. 25	Tls. 25	—	First year	—
Campbell, Moore & Co., Limited	$10 buyers		$12,000	1,200	$10	$10	$9,000	$3 for 1905	Apr. 2, 1906
Dunning & Company, Limited	$50 sellers		$100,000	2,000	$50	$50	—	$5 year ending 28.2.08	Apr. 15, 1908
J. Llewellyn & Co., Limited	$50 buyers		$72,000	1,200	$60	$60	—	7.20 for 1908	Apr. 1, 1909
Lane, Crawford & Company	$137½ sales	137½	$250,000	2,500	$100	$100	—	Final of 7% making 14% for 1907	May 25, 1908
Mondon (E. L.) Limited	Tls. 6 buyers		Tls. 225,000	9,000	Tls. 25	Tls. 25	none	—	—
S. Moutrie & Company, Limited	$48 sellers		$250,000	5,000	$50	$50	—	$4 for year ended March 31, 1908	June 18, 1908
Weeks & Company, Limited	$22 buyers		$400,000	20,000	$20	$20	$25,000	Interim of 80 cents for 1908	Dec. 14, 1908
Dominion Rubber Co., Limited	Tls. 4		Tls. 225,000	22,500	Tls. 10	Tls. 4	—	First year	—
Kalumpong Rubber Co., Ltd.	Tls. 42 sellers		Tls. 700,000	14,000	Tls. 50	Tls. 50	** Tls. 11,844.48	6% for 1907	Nov. 29, 1908
Senawang Rubber Estates Company, Limited	Tls. 100		Tls. 250,000	2,500	Tls. 100	Tls. 100	—	—	—
Senawang Rubber Estates Company, New	Tls. 75				Tel. 100	Tls. 75			
Tebong Rubber and Tapioca Estate, Limited	20s.		£76,000	76,000	£1	£1	—	—	—
Eastern Fibre Co., Limited	Tls. 10 nominal		Tls. 300,000	30,000	Tls. 10	Tls. 10	—	—	—
Shanghai Mercury, Limited	Tls. 50 buyers		Tls. 105,500	2,100	Tls. 50	Tls. 50	—	Final of 6% making 10% for year ended 30.4.08	June 29, 1908
Shanghai Mutual Telephone Co., Limited	Tls. 57 buyers	57½	Tls. 675,000	13,500	Tls. 50	Tls. 50	—	Tls. 3 for 1907	June 28, 1908
China Export Import & Lumber Company, Limited	Tls. 92½ nominal		Tls. 350,000	500	Tls. 100	Tls. 50	—	10 p. c. for year ending 29.2.08	May 1, 1908
China Printing Co., Limited	Tls. 50		Tls. 750,000	1,500	Tls. 50	Tls. 50	—	80 cents for 1908	Feb. 8, 1909
Dallas Horse Repository Co., Ltd.	Tls. 25 nominal		Tls. 250,000	5,000	Tls. 50	Tls. 50	—	—	—
Hirano Mineral Water Co., Ltd.	Y. 15 sales		Y. 125,000	5,000	Y. 25	Y. 25	—	(10%=yen 2½ for year ending 30th Sept. 08	Dec. 1908
E. E. Porter & Co., Limited	$50		$100,000	2,000	$50	$50	—	$6 for 1907	Apr. 22, 1908
Shanghai Electric & Asbestos Company, Limited	$23 sales		$125,000	5,000	$25	$25	—	Final of 4% making 8% for 1907	May 29, 1908
Shanghai Electric Construction Company, Limited	£11 buyers	£11	£300,000	30,000	£10	£10	—	First year	—

DEBENTURES

LOANS		PRICE—PLUS ACCRUED INTEREST	AMOUNT OF LOAN	OUTSTANDING	NOMINAL VALUE	RATE OF INTEREST	WHEN PAYABLE
Shanghai Municipal Debentures	1892	Tls. 92½	Tls. 50,000	Tls. 45,400	Tls. 100	5 %	June & Dec.
do	1893	,, 96	,, 125,000	,, 32,000	,, 100	5½ ,,	Do
do	1894	,, 104½	,, 105,000	,, 60,000	,, 100	6 ,,	Do
do	1895	,, 92½	,, 115,000	,, 32,600	,, 100	5 ,,	Do
do	1896	,, 92½	,, 140,000	,, 131,800	,, 100	5 ,,	Do
do	1897	,, 92½	,, 268,800	,, 268,400	,, 100	5 ,,	Do
do	1898	,, 104½	,, 300,000	,, 60,000	,, 100	6 ,,	Do
do	1900	,, 96	,, 33,900	,, 31,700	,, 100	5½ ,,	Do
do	1901	,, 104½	,, 250,000	,, 200,000	,, 100	6 ,,	Do
do	1902	,, 104½	,, 150,000	,, 150,000	,, 100	6 ,,	Do
do	1903	,, 101½	,, 490,500	,, 490,500	,, 100	6 ,,	Do
do	1904	,, 104½	,, 214,500	,, 214,500	,, 100	6 ,,	Do
do	1905	,, 104½	,, 320,000	,, 320,000	,, 100	6 ,,	Do
do	1907	,, 104½	,, 250,000	,, 250,000	,, 100	6 ,,	Do
Chinese Imperial Government Loan	1886 E	,, 250	,, 767,200	,, 354,400	,, 250	7 ,,	Mar. & Sept
Shanghai Land Investment Co., Debentures	1890	,, 102	,, 250,000	,, 250,000	,, 100	6 ,,	May & Nov.
do	1892	,, 96	,, 250,000	,, 250,000	,, 100	5½ ,,	June & Dec.
do	1894	,, 101	,, 250,000	,, 250,000	,, 100	6 ,,	Mar. & Sept.
do	1896	,, 92½	,, 250,000	,, 250,000	,, 100	5 ,,	June & Dec.
do	1900	,, 102	,, 250,000	,, 250,000	,, 100	6 ,,	April & Oct.
do	1901	,, 102	,, 250,000	,, 250,000	,, 100	6 ,,	June & Dec.
do	1901	,, 96	,, 100,000	,, 100,000	,, 100	5 ,,	May & Nov.
do	1902	,, 102	,, 400,000	,, 400,000	,, 100	6 ,,	June & Dec.
do	1905	,, 102	,, 250,000	,, 250,000	,, 100	6 ,,	Do
Shanghai Waterworks Co., Debentures	1894	,, 103	,, 100,000	,, 100,000	,, 100	6 ,,	Mar. & Sept.
do	1896	,, 92½	,, 100,000	,, 100,000	,, 100	5 ,,	June & Dec.
do	1899	,, 103	,, 50,000	,, 50,000	,, 100	6 ,,	Do
do	1900	,, 103	,, 100,000	,, 100,000	,, 100	6 ,,	Mar. & Sept.
do	1902	,, 103	,, 100,000	,, 100,000	,, 100	6 ,,	Do
do	1903	,, 103	,, 100,000	,, 100,000	,, 100	6 ,,	June & Dec.
Perak Sugar Cultivation Co., Debentures	1902	,, 101	,, 200,000	,, 200,000	,, 100	7 ,,	April & Oct.
Shanghai Gas Co., Debentures	1897	,, 92½	,, 100,000	,, 100,000	,, 100	5 ,,	Do
do	1899	,, 102	,, 1,000,000	,, 100,000	,, 100	6 ,,	May & Nov.
do	1900	,, 102	,, 2,000,000	,, 200,000	,, 100	6 ,,	June & Dec.
Shanghai and Hongkew Wharf Co., Debentures	1902	,, 100½	,, 799,800	,, 799,800	,, 100	6 ,,	Do
Astor House Co., Debentures	1905	,, 103	,, 500,000	¶ ,, 500,000	,, 100	7 ,,	Do
British Municipal Council, Hankow	1901	Sh. ,, 105	H'kow Tls 100,000	H'kow Tls 100,000	,, 100	7 ,,	June & Dec.
Shanghai Club Debentures	1907	,, 96	Tls. 170,000	Tls. 170,000	,, 100	6 ,,	Do
Country Club Debentures		,, 97	,, 139,000	,, 139,000	,, 100	6 ,,	Do
do	1907	,, 97	,, 92,000	,, 92,000	,, 100	6 ,,	Do
Lane Crawford & Co., Debentures	1907	,, 100	,, 110,000	,, 110,000	,, 100	7 ,,	Mar. & Sept.
Anglo-French Land Debentures	1908	,, 102½	,, 250,000	,, 250,000	,, 100	6 ,,	June & Dec.

SINGAPORE SHARE QUOTATIONS

(COURTESY MESSRS. FRASER & CO., BROKERS, SINGAPORE, MAY, 1909)

Date of Formation	Capital	Capital paid up	No. of Shares Issued	Issue Value	Paid up	Reserve	Last Dividend	Name	Buyers.	Sellers.	Closing Quotations
								MINING			
1903	$300,000	300,000	30,000	10	10	.....	10% for year ending 31-3-08	Belat Tin Mining Co., Ltd.	6.00	6.50	6.00
1907	$300,000	225,000	22,500*y*	10	10	.....	.....	Bruang Ltd.	6.00	6.25	6.25
1901	$600,000	600,000	60,000	10	10	25,000	10% for year ending 30-4-08	Bruseh Hydraulic Tin Mining Co., Ltd.	7.00	7.50	7.50
1903	£500,000	444,769	444,769*a*	1	1	.....	.....	Duff Development Co., Ltd.	3.75	4.00	4.00
1907	$400,000	375,000	37,500*b*	10	10	.....	.....	Kanaboi, Ltd.	1.00	1.25	1.25
1901	£60,000	60,000	60,000	1	1	.....	2/- interim for 1908	Kinta Tin Mines, Ltd.	9.50	9.75	9.50
1906	£100,000	100,000	100,000	1	1	.....	.....	Kledang Tin Mining Co., Ltd.	1.50	3.00	3.00
1905	$150,000	99,000	9,900*c*	10	10	14,000	35% for year ending 31-12-07	Kuantan Tin Mining Co., Ltd.	....	4.00	4.00
1906	£120,000	120,000	120,000	1	1	.....	.....	Lahat Mines Ltd.	7.75	8.25	8.25
1906	£30,000	30,000	30,000	1	1	.....	.....	Malaya and Siam Corporation, Ltd.	....	5/-	5/-
1906	$450,000	450,000	45,000	10	10	.....	.....	Malacca Tin Dredging Co., Ltd.	2.25	2.75	2.25
1906	£250,000	179,500	500,000*h* 54,500	5/- 1	5/- 1	.....	.....	Pahang Consolidated Co., Ltd. " " " 7% *Pref*	24/6	25/6	24/6 nominal.
1907	£100,000	80,000	80,000*n**	1	1	.....	.....	Pengkalen, Ltd.	6.75	6.85	6.75
1904	£120,000	100,000	100,000*d*	1	1	6,000	45% for year ending 30-6-07	Pusing Lama Tin Mines, Ltd.	3.50	4.00	3.50
1907	$450,000	300,000	30,000*g**	10	10	.....	.....	Rahman Hydraulic Tin Ltd.	....	7.50	7.50
1905	£27,000	21,750	21,750*e*	1	1	.....	1/- interim during 1907	Rambutan, Ltd.	....	6.50	6.50
1892	£200,000	191,250	50,000	1	1	4,873	1/- paid January 1901	Raub Aust. Gold Ming. Co., Ltd, *Fully pd.*	6.75	7.00	7.00
			150,000	1	18/10	.....	1/- " " "	" " " *Contributory*	6.25	6.50	6.50
1905	£40,000	40,000	40,000	1	1	.....	.....	Redhills Tin Mining Co., Ltd.	2.10	2.30	2.30
1898	*Ge*2,500,000	2,500,000	25,000	100	100	.....	100% for year ending 31-12-08	Redjang Lebong Mining Co., Ltd.	....	....	1015.00
1900	$110,000	110,000	22,000	5	5	.....	3% for year ending 22-1-09	Royal Johore Tin Mining Co., Ltd.	1.10	1.25	1.25
1907	$550,000	500,000	50,000*o**	10	10	.....	.....	Salak South, Ltd.	5.75	6.25	5.75
1907	£80,000	80,000	80,000	1	1	.....	.....	Sempam Tin Mines, Ltd.	1.25	2.00	2.00
1906	$850,000	850,000	85,000	10	10	25,000	10% for year ending 31-12-08	Serendah Hydraulic Tin Ming. Co., Ltd.	7.25	7.50	7.25
1899	$230,000	230,000	23,000	10	10	.....	3% for ½ year ending 31-12-08	Sipiau Tin Co., Ltd.	4.50	5.00	4.50
1907	£90,000	70,000	70,000*x*	1	1	.....	-/6 interim for 1908	Tekka, Limited.	10 00	10.25	10.00
1902	£160,000	149,185	149,185*f*	1	1	.....	5/- during 1907	Tronoh Mines, Ltd.	7.85	8.00	7.85
								RUBBER			
1905	£150,000	137,062 10/-	46,500	1	1	.....	10% interim for 1908	Anglo-Malay Rub. Co., Ltd. *Fully paid*	5.5.6	5.7.6	5. 5. 6.
			103,500	1	17/6	.....		" " " *Contributory*	5.2.6	5.5.0	5. 2. 6
1905	$200,000	126,000	12,600*f**	10	10	7,400	12½% interim for 1908	Balgownie Rub. Estate Ltd. *Fully paid*	28.50	29.00	28.50
1904	£30,000	20,187 10/-	19,000	1	1	.....					
			4,750*i*	1	5	.....		Batu Caves Rub. Co., Ltd.	4.2.6	4.5.0	4. 2. 6
1906	80,000	70,000	70,000*v**	1	1	.....	5% for year ending 31-3-08	Batu Tiaga (Selangos) Rubbes Co., Ltd.	1.7.0	1.8.0	1. 7. 0
1907	£30,000	21,000	18,000*n**	1	1	.....	.....	Bukit Lintang Rubber Estates, Ltd.	1.6.0	1.7.6	1. 6. 0
			6,000	1	10/-	.....	.....	" " " *Contributory*	13/-	15/-	13/-
1903	£70,000	66,700	66,700*j*	1	1	.....	12% interim for 1908	Bukit Rajah Rubber Co., Ltd.	6.10.0	7.0.0	6. 10. 0
1906	£35,000	27,000	6,000	1	1	.....	.....	Castlefield (K.) R. Estate, L., *Fully pd.*	1.8.6	1.12.6	1. 8. 6
			24,000	1	17/6	.....	.....	" " " " *Contributory*	1.6.0	1.10.0	1. 6. 0
1906	$150,000	125,000	12,500*k*	10	10	.....	.....	Castlewood Rubber Co., Ltd.	3.75	4.00	4.00
1904	£16,000	16,000	10,000	1	1	.....	17½% interim for 1908.	Cicely Rubber Estates Co., Ltd.	7.0.0	7.5.0	7. 0. 0
			6,000	1	1	.....	20% interim for 1908.	" " " " 5% *Pref*	....	....	7. 5. 0
1905	£75,000	58,507	55,007*l*	1	11	.....	5% interim for 1908	Consolidated Malay Rub. Estates, Ltd.	3.17 0	4.2.6	4. 2. 6
			7,000	1	10	.....					
1906	110,000	102,500	102,500*u**	1	1	.....	.....	Damansara (Selangor) Rubber Co., Ltd.	2.10.0	2.11.6	2. 10. 0
1906	£310,000	259,530	181,454*m*	1	1	8,784	5% interim for 1908	Highlands & Lowds. Para Rub. Co., Ltd.	2.16.0	2.17.6	2. 16. 0
			123,546	1	12/6	.....	.....	" " " " *Contributory*	1.17.6	2.0.0	1. 17. 6
1905	£50,000	36,500	23,000	1	1	.....	.....	Kapar Para Rubber Estates, Co., Ltd.	2.11 0	2.15.0	2. 12. 6
			27,000	1	10/-	.....	.....	" " " " " "	....	....	1. 17. 6
1906	£180,000	180,000	180,000	1	1	.....	.....	Kuala Lumpur Rubber Co., Ltd.	1.16.6	1.18.6	1. 16. 6
1907	100,000	81,000	90,000*r**	1	18/-	.....	3% for year ending 30-6-08.	Labu (F. M. S.) Rubber Co., Ltd.	1.9.0	1.10.0	1. 9. 0
1907	£320,000	232,395	197,395*c**	1	10/-	.....	.....	Lanadron Rubber Estates, Ltd.	2.9.0	2.10.0	2. 10. 0
			70,000	1	1	.....	.....	" " " *Contributory*	1.9.6	1.10.0	1. 10. 0
1906	*Ge* 175,000	175,000	540	250	250	.....	.....	Langen Rub. and Cocoanut Co., Ltd.	....	250	250.
			160	250	250	.....	.....	" " " " " *Deferred*	....	250	250.
1905	£1 25,000	75,000	60,000*p**	£1	£1	.....	.....	Ledbury Rubber 2tates Ltd	1.5.6	1.7.6	1. 5. 6
			40,000	£1	7/6	.....	.....	" " "	11/6	13/-	11/6
1895	£100,000	98,324 8/-	883,244*d**	2/-	2/-	.....	60% for year ending 31-12-08.	Linggi Plantations Ltd., *Ordinary*	17/-	17/3	17/-
			10,000	1	1	.....		" " " 7% *Pref*	....	....	1. 0. 0
1906	£300,000	300,000	115,000	1	1	.....	7½% for year ending 31-12-07.	Malacca Rubber Plants., Ltd. 7½% *Pref.*	2 11 0	2.12.6	2. 11. 0
			185,000	1	1	.....		" " *Ordinary*	2.7.0	2.8.6	2. 7. 0
1903	£30,000	22,500	22,500*o*	1	1	.....	45% for year ending 31-12-08.	Pataling Rubber Estates Synd. Ltd.	8.5.0	8.10.0	8. 5. 0
1906	$250,000	225,000	22,500	10	10	.....	.....	Ragalla Rubber Co., Ltd. *Ordinary*	14.50	15.00	15.00
		25,000	2,500	10	10	.....	.....	" " " 8% *Preference*	14.50	15.00	15.00
1904	£20,000	16,943 8/-	20,000*a**	1	1	20.000	.....	Sagga Rubber Company Limited	2.7.6	2.10.0	2. 7. 6
1904	$100,000	100,000	1,000*j**	100	100	.....	25% for year ending 31-1-09.	Sandycroft Rubber Co., Ltd.	400 00	425.00	425.00
1897	£100,000	76,800	48,000*s**	1	1	.....	.....	Seafield Rubber Co., Ltd.	2.0.0	2.2.6	2. 0. 0
			48,000	1	12/-	.....	.....	" " "	1.10.0	1.13.0	1. 10. 0
1898	£30,000	30,000	300,000	2/-	2/-	.....	25% interim for 1908.	Selangor Rubber Co., Ltd.	1.4.6	1.5.0	1. 4. 6
1905	$500,000	500,000	5,000	100	100	.....	.....	Singapore Rubber Co. Ltd.	115.00	125.00	115.00
1903	$250,000	250,000	2,500	100	100	.....	.....	Singapore & Johore Rub. Co., Ltd.	145.00	160.00	145.00
1906	£175,000	174,615	174,615*q**	1	1	.....	3% for year ending 31-3-08.	Straits Settlements (B.) Rub. Co., Ltd.	1.0.6	1.0.9	1. 0. 6
1906	£110,000	100,000	100,000*k**	1	1	.....	.....	Sungei Kapar Rubber Co., Ltd.	2.5.6	2.10.0	2. 5. 6
1907	£70,000	44,750	14,000	1	1	.....	.....	Sungei Salak Rubber Co., Ltd.	1.7.6	1.10.0	1. 7. 6
			41,000	1	15/-	.....	.....	" " " *Contributory*	1.2.6	1.3.6	1. 2. 6
1904	£50,000	45,710	41,920*p*	1	1	.....	.....	Sungei Way (Selangor) Rub. Co., Ltd.	2.10.0	2.15.0	2. 10. 0
			7,580	1	10	.....	.....	" " " " "	....	....	1. 10. 0
1907	200 000	154,000	154,000*t**	1	1	.....	.....	United Serdang (S.) R. Plantations, Lt.	1.19.6	2.2.6	1. 19. 6
1904	£60,000	50,600	506,000*q*	2/-	2/-	.....	25% interim for 1908.	Vallambrosa Rubber Co., Ltd.	16/-	19/6	19/-
								GENERAL			
1894	£5,377.10.0	4,805	7,688*b**	12/6	12/6	1,500	15% for year ending 31-12-07	Bells Asbestos Eastern Agency, Ltd.	6.25	8.00	6.25
1908	$250,000	202,500	2,025*m**	100	100	.....	.....	Brunei Oil Royalty, Ltd	....	100.00	100.00
1907	$1,500,000	1,099,672	27,083*l**	'10	10	.....	5% interim for 1908	Eastern Smelting Co., Ltd.	6.65	6.75	6.75
			118,406	10	7	.....					
1898	$225,000	225,000	4,500	50	50	150,000	15% & 2½% bon. for yr. end. 31-12-08.	Fraser & Neave, Ltd.	140.00	142.50	142.50
						15,000,000*t*					
1865	$15,000,000	15,000,000	120,000	125	125	14,500,000*u*	£2-0-0 per share and bonus of 5/- at ex.- 1[8¾ half year ending 31-12-08	Hongkong & Shanghai Bank'g Corpt'n.	....	....	86.0. 0
						250,000*v*					
1905	$2,400,000	2,400,000	18,000	100	....	75,000	2½% for year ending 31-10-08	Howarth Erskine, Ltd.	....	90.00	90.00
			6,000	100	....	.....	7% for year ending 31-10-08	" " 7% *Pref*	....	100.00	100.00
1896	$1,000,000	1,000,000	6,000	100	100	600,000	10% for year ending 31-12-07	Katz Brothers, Ltd. *Deferred*	....	125.00	125.00
			4,000	100	100	.....	8% " " " " "	" " 8% *Cum. Pref*	....	....	150.00 nominal
1901	$34,000	34,000	3,400	10	10	.....	20% for year ending 31-10-08	Maynard & Co., Ltd.	18.50	19.00	19.00
1899	$875,000	875,000	6,000	100	100	175,000	5% for year ending 31/12/07	Riley, Hargreaves & Co., Ltd.	62.50	67.50	67.50
			3,750	100	100	.....	7% for year ending 31/12/08.	" " " " 7% *Pref.*	93.00	100.00	93.00
1903	$600,000	250,000	25,000*r*	10	10	.....	7½% for year ending 30-6-08.	Singapore Cold Storage Co., Ltd	8.25	8.75	8.25
1891	$30,000	30,000	600	50	50	23,000	10% for year ending 31-7-08	Singapore Dispensary Ltd.	....	50.00	50.00
1903	£400,000	400,000	400,000	1	1	.....	.....	Singapore Electric Tramways, Co., Ltd.	4/-	4/3	4/.
1904	$160,000	112,000	1,120*e**	100	100	11,200	5% for year ending 30/6/07	Straits Engineering Syndicate, Ltd.	....	30.00	30.00
1884	$200,000	200,000	2,000	100	100	35,000	10% during 1907	Straits Ice Co., Ltd	....	....	130.00
1890	$500,000	49,000	4,980*h**	100	100	760,000*w*	10% for year ending 31-12-08	Straits Steam Ship Co., Ltd.	195.00	197.50	195.00
1887	$3,000,000	3,000,000	300,000	10	10	1,250,000	10% & 5% bon. for half yr. end. 30-9-08.	Straits Trading Co., Ltd.	50.50	51.00	50.50
						1,222,409*x*					
								DEBENTURES			
								Howarth Erskine, Ltd. 6%.....$ 600,000	....	1%	1% prem.
								Riley, Hargreaves & Co., Ltd. 6%..284,000	....	1%	1% prem.
								Sandycroft Rub. Co., Ltd. 7½%.... 22,100	....	....	par.
								Singapore Electric Tramways, Co., Ltd. 5%.....£350,000	....	....	nominal
								Singapore Municipal 6% 400,000	....	....	20%prem.nom.
								" " 5%.....1,878,000	7%	....	7% prem.
								" " 4½%.....1,600,000	3%	5%	3% prem.
								" " 4%.....602,900	6%	par.	5% discount.
								Straits Engineering Syndicate, Ltd. 6%.....45,000	....	par.	par.
								Tanjong Pagar Dock Board 5%..1,050,000	par	....	par.

a 11,282 unissued; 43,949 6% debenture
b 2,500 unissued
c 5,100 "
d 20,000 "
e 5,250 "
f 10,815 "
h 100,000 " *Ord.*; 45,500 " *Pref.*
i 6,250 "
j 3,300 "
k 2,500 "
l 12,993 "
m 4,140 "; 8,60 subscribed by employees
n 1,905 unissued.
o 7,500 "
p 500 to be issued to employess
q 94,000 unissued.
r 35,000 "
s 465 "
t Special Gold Reserve Fund
u Silver Reserve Fund.
v Insurance Fund.
w Sundry Reserves.
x Sundry Reserves.
y 7,500 unissued.
z 20,000 "
*a** 4,595 part-paid shares
*b** 916 unissued
*c** 52,605 unissed.
*d** 16,756 "
*e** 480 "
*f** 7,400 "
*g** 15,000 unissued.
*h** 20 "
*i** 20,000 "
*j** 221 7½% Debentures.
*k** 10,000 unissued
*l** 4,511 "
*m** 475 "
*n** 6,000 "
*o** 5,000 "
*p** 25,000 "
*q** 385 forfeited
*r** 10,000 unissued.
*s** 4,000 "
*t** 46,000 "
*u** 7,500 "
*v** £10,000 Convertible 6% Debentures.

YOKOHAMA SHARE QUOTATIONS

COURTESY A. C. HUTTON POTTS, SHARE AND GENERAL BROKER, YOKOHAMA, MARCH, 1909.

STOCKS.	CAPITAL.	NO. OF SHARES.	ISSUE VALUE.	AMOUNT PAID UP.	RESERVE FUND.	AT WORKING ACCOUNT OR CARRIED FORWARD.	DATE.	LAST DIVIDEND.	FOR TERM.	CLOSING QUOTATION.
Brett & Co., Ltd.	-Y- 28,000	2,800	-Y- 10	-Y- 10			31-12-07	10%	for 1 year	10 Nominal.
Club Hotel, Ltd.	185,000	1,850	100	100	3,000	-Y- 768.96	31-3-08	7%	for 1 year	70 Nominal.
Grand Hotel, Ltd.	500,000	5,000	100	100	10,000		31-12-08	3%	for ½ year	100 Buyers.
Helm Bros., Ltd.	186,000	3,720	50	50	25,000	-Y- 6,395.55	31-12-08	17½%	for 1 year	80 Sales,
Langfeldt & Co., Ltd.	150,000	1,500	100	100		Dr. 4,103.41	30-6-08		for ½ year	60 Nominal.
C. Nickel & Co., Ltd. †	500,000	20,000	25	25		1,782.10	31-10-08	20%	for 1 year	41 Sales.
Yokohama Engine and Iron Works *	500,000	10,000	50	50	50,000	-Y- 29,421.19	31-5-08	10%	for 1 year	65 Sales
Oriental Hotel, Ltd., Ordinary	250,000	3,000	50	50	306,090.49		31-8-07	12%	for 1 year	50 Nominal.
Oriental Hotel Ltd., Preference		2,000	50	50				8%	for 1 year	50 Nominal.
The Union Estate and Investment Co., Ltd. ‡	1,000,000	10,000	100	100	6,000.00	1,753.03	30-9-08	7%	for 1 year	100 Nominal.

† 285,000 unissued.
‡ 475,000 unissued.

*-Y- 390,000 issued.
110,000 unissued.

DEBENTURE LOANS.	AMOUNT OF LOAN.	FACE VALUE OF DEBENTURES.	RATE OF INTEREST.	INTEREST PAYABLE.	CLOSING QUOTATON.
Brett & Company, Limited	11,500.00	100.00	7%	1 June and 1 Dec.	95 Sales.
Yokohama United Club	250,000.00	100.00	7%	30 June and 31 Dec.	100 Sales.
C. Nickel & Company, Limited	50,000.00	100.00	8%	1 May and 1 Nov.	110 Sellers.
Oriental Hotel, Limited	250,000.00	100.00	8%	1 April and 1 Oct.	100 Sellers.
Union Estate and Investment Co., Limited	250,000.00	100.00	6%	30 June and 31 Dec.	95 Sellers.

JAPANESE STOCKS.	FACE VALUE.	AMOUNT PAID UP.	LAST DIVIDEND.	DIVIDEND PAYABLE.	CLOSING QUOTATION.
Bonds & Debentures.					
Exchequer Bonds 2nd issue	-Y-100	-Y-100	5%	March and Sept.	-Y- 98.70
Exchequer Bonds 3rd issue	100	100	5%	March and Sept.	,, 97.70
Consolidated Bonds (Seiri)	100	100	5%	June and Dec.	,, 91.90
War Bonds (Gunji)	100	100	5%	June and Dec.	,, 91.90
Imperial 5% Bonds	100	100	5%	March and Sept.	,, 90.20
Special 5% Bonds (issued 1906)	100	100	5%	June and Dec.	,, 92.10
Yokohama Water Works Bonds	100	100	6%	June and Dec.	,, 96.20
Yokohama City Public Loan Bonds	100	100	6%	March and Sept.	,, 95.00
Osaka City Harbour Construction Bonds	100	100	6%	June and Dec.	,, 97.00
Osaka City Public Loan Bonds	100	100	6%	June and Dec.	,, 97.00
Kawasaki Dock Yards Co.'s Debentures	100	100	7%	June and Dec.	,, 97.00
Tokyo Race Associations "	500	500	30%	June and Dec.	,, 160.00
Railways & Electric Trams.					
Tokyo Railway Company Limited	50	50	4%	June and Dec.	,, 59.65
Yokohama Electric Tramway Company, Limited	50	50	6%	July and Jan.	,, 46.00
Keihin Electric Tramway Company, Limited	50	50	10%	June and Dec.	,, 73.00
Southern Manchurian Railway Co., Ltd.	100	20	6%	June and Dec.	,, 32.00
Hanshin Electric Tramway Co., Ltd.	50	50	12%	May and Nov.	,, 113.00
Cotton Spinnings.					
Kanegafuchi Cotton Spinning Company, Limited	50	50	14%	July and Jan.	,, 97.80
Fuji Gassed-yarn Company, Limited	50	50	14%	July and Jan.	,, 95.20
Tokyo Cotton Spinning Company, Limited	50	50	5%	July and Jan.	,, 39.20
Imperial Hemp Weaving Company, Limited	50	50	12%	July and Jan.	,, 66.00
Nisshin Boseki Kabushiki Kaisha	50	12½	.....	———	,, 13.25
Sugar & Beer Cos.					
Dai-nippon Sugar Refinery Company, Limited	50	50	15%	May and Nov.	,, 21.05
Ensuiko Sugar Refinery Company, Limited	50	15	20%	June and Dec.	,, 35.00
Dai-nippon Beer Company, Limited	50	50	15%	July and Jan.	,, 78 75
Kirin Brewery Company, Limited	50	50	6%	July and Jan.	,, 51.00
Docks & Steamships.					
Yokohama Dock Company Limited	50	33	12%	June and Dec.	,, 53.50
Uraga Dock Company, Limited	50	50	.....	July and Jan.	,, 11.00
Kawasaki Dockyard Company, Limited	50	50	12½%	Feb. and Aug.	,, 55.70
Nippon Yusen Kaisha	50	50	12%	May and Nov.	,, 78.50
Hokkaido Tanko S. S. Company, Limited	50	50	14%	July and Jan.	,, 55.95
Miscellaneous.					
Tokyo Electric Light Company, Limited	50	50	11%	June and Dec.	,, 84.90
Tokyo Gas Company, Limited	50	50	13%	July and Jan.	,, 93.20
Yokohama Union Electric Light Company, Limited	50	50	14%	July and Jan.	,, 87.50
Fuji Paper Mills	50	50	6%	June and Dec.	,, 32.50
Otaru Timber Company, Limited	50	50	.....	March and Sept.	,, 13.00
Hoden Petroleum Company, Limited	50	50	36%	April and Oct.	,, 125.40
Tokyo Rope Manufacturing Company, Limited	50	50	20%	June and Dec.	,, 102.00
Japan Horse Improvement Company, Limited	50	50	15%	March and Sept.	,, 12.00
Tokyo Stock Exchange Company	50	50	11⅓%	June and Dec.	,, 144.40
Osaka Electric Light Company, Limited	50	50	15%	July and Jan.	,, 128.00
Kobe Electric Light Company, Limited	50	50	14%	July and Jan.	,, 87.50

BANGKOK QUOTATIONS

(COURTESY MESSRS. EDWARDS & CO., BANGKOK, SIAM.)

NAME.	BUYERS.	SELLERS.	QUOTATION.	ESTABLISHED.	CAPITAL.	NO. OF SHARES.	ISSUE VALUE.	AMOUNT PAID UP.	RESERVE FUND	LAST DIVIDEND	WHEN PAID OR PAYABLE.
Siam Electricity Co., Ltd.	Tcs. —	Tcs. 410	Tcs. 410	1901	£ 350,000	35,300	£ 10	£ 350,000	Tcs. 448,174.31	12% & 12½ T. bon.	Feb. 29, 1908
Paknam Railway Co., Ltd	,, 190	,, —	,, 190	1893	Tcs. 400,000	5,000	Tcs. 80	Tcs. 400,000	,, 80,000	6% & 2 Tel. bonus for ½ year ending	Dec. 31, 1907
Siam Tramway Co , Ltd	,, —	,, —	,, 150	1905	,, 1,450,000	6250 Shares 7250 Deb. 1000 P. Shares	,, 100	,, 1,450,000	—	2%	Mar. 31, 1908 Sept. 30, ,,
Meklong Railway Co., Ltd	,, —	,, 110	,, 115	July 12, 1907	,, 2,230,000	22,300	,, 100	,, 2,230,000	17,316.22	—	—
Bangkok Manufact. Co , Ltd.	,, 145	,, —	,, 160	1898	,, 400,000	4,000	,, 100	,, 400,000	—	None	—
Howarth Erskine, Ltd.	,, —	,, —	,, 200	1905	$ 2,400,000	24,000	$ 100	$ 2,400,000	$ 40,000	5%	Oct. 31, 1908
Bangkok Dock Co., Ltd.	,, —	,, —	,, 150	1865	Tcs. 1,000,000	6,000	Tcs. 100	Tcs. 1,000,000	Tcs. 270,000 60,000	12½% & 2½ Bonus	Dec. 31, 1907
Siam Steam Packet Co.	,, —	,, 75	,, 80	1898	,, 131,250	2,625	,, 50	,, 131,250	,, 36,000	14%	Dec. 31, 1907
Siam Commercial Bank	,, —	,, 1,100	,, 1,150	1906	,, 3,000,000	3,000	,, 1,000	,, 3,000,000	,, 140,000	5%	Mar. 31, 1907
Menam Motor Boat Co.	,, —	,, —	,, 100	1905	,, 200,000	2,000	,, 100	,, 125,000	—	—	—
Jenderata Rubber Co.	,, —	,, —	,, 50	1906	£ 40,000	4,000	£ 10	£4, per Share	—	—	—

PHILIPPINE SHARE REPORT

MAY 1ST, 1909

NAME	WHEN ESTABLISHED	AUTHORIZED CAPITAL	ISSUE VALUE OF SHARE	NO. OF SHARES	SUBSCRIBED	PAID UP	RESERVE	WORKING %	DATE	LAST DIVIDEND	CLOSING QUOTATIONS
American Drug Store	1908	₱ 100,000	₱1,000	100	40	₱1,000	.....	₱ 5,000	Jan. 4, 1909	.....	No Sellers.
*Banco Español Filipino	1851	3,000,000	200	15,000	8,439	200	₱225,000	.....	.....	7% for year 1908	190 nom.
Benguet Consolidated Mining Co	1903	2,000,000	2	1,000,000	495,000	2	.....	38,000	Feb. 2, 1909	.....	No Sellers.
Benguet Commercial Co., Ltd.	1908	200,000	10	20,000	7,360	10	.....	.....	.....	7% for year 1907	₱10.
Cadwallader-Gibson Lumber Co	1908	1,000,000	100	10,000	8,650	100	.....	.....	.....	.....	No Sellers.
*Compania Maritima	.....	1,018,000	200	5,090	5,090	200	.....	.....	.....	.....	₱40 buyers
*El Varadero de Manila	.....	350,000	100	3,500	3,500	100	.....	.....	.....	.....	Sellers 70
Export & Import Lumber Co	.....	200,000	200	1,000	1,000	200	.....	.....	.....	.....	No sellers.
*Fabrica de Hielo de Manila	.....	350,000	50	7,000	7,000	50	.....	.....	.....	18% for year 1908	₱80 sellers
*Germinal Cigar Factory	.....	500,000	500	1,000	1,000	500	₱285,000	.....	.....	6% for year 1908 and 6% on capital	700 sellers
H. E. Heacock Co	1909	100,000	100	1,000	800	100	.....	.....	.....	First year	No sellers.
Insular Lumber Co	1907	2,000,000	200	10,000	9,000	200	.....	.....	.....	.....	No sellers.
Juan Seiboth Co., Ltd	1908	150,000	20	7,500	500	20	.....	.....	.....	First year	.....
*La Concha Button Factory	.....	75,000	100	750	750	100	.....	.....	.....	10% for year 1908	₱110 sellers.
Lambert, Springer Co	1908	200,000	1,000	200	80	1,000	.....	.....	.....	.....	No sellers.
Luzon Stevedoring Co	1909	250,000	25	10,000	4,200	25	.....	.....	.....	First year	.....
Newspaper Publishing Co	1907	400,000	100	4,000	3,740	100	.....	.....	Dec. 31, 1908.	½ of 1% interim for 1908	No sellers.
Walter E. Olsen Co., Inc	1909	500.000	100	5,000	2,033	100	.....	.....	.....	First year	No sellers.
Paracale Gold Dredging Co	1907	£10,000	£1	10,000	9,000	£1	.....	.....	.....	.....	£1.10 s.
Palomar Park Amusement Co	1908	300,000	.....	300,000	60,312	.50	.....	.....	.....	.....	₱1.
Phil. Hemp Machine Co	1907	150,000	100	1,500	1,235	100	.....	.....	.....	.....	No sellers.
Philippine Publishing Co	1907	600,000	200	3,000	2,181	200	.....	.....	Mar. 1st, 1909	₱3 a share for 1908	₱50
Port Banga Lumber Co	1908	100,000	1.000	100	934	93,400	None.	40,000	First Saturday in January	None	No sellers.
The Philippine Gold Dredging Co	1907	200,000	10	20,000	20,000	10	.....	.....	.....	.....	No sellers.
*Philippine Co., Ltd	.....	750,000	10	7,500	7 500	10	.....	.....	.....	.....	₱5 buyers.
Philippine Rosin & Turpentine Co	.....	150,000	1	150,000	70,000	1	.....	.....	.....	First year	.....
The Rosenstock Pub. Co	1908	75,000	10	7,500	6,000	10	.....	.....	.....	.....	No sellers.
*San Nicolas Iron Works	.....	300,000	500	600	600	500	.....	.....	.....	.....	₱200 sellers.
San Mauricio Gold Mining Co	1908	4,000,000	200	20,000	.....	.....	.....	.....	.....	First year	No sellers.
Tarlac Railway Co	1906	150,000	100	1,500	1,500	100	.....	₱9,674.75	June 30, 1908.	.....	No sellers.
Union Hemp Machine Co	1909	50,000	10	5,000	2,600	10	.....	.....	.....	.....	No sellers
Zamboanga Cold Storage Co	1903	40,000	400	100	200	200	₱ 8,500	.....	May 1st, 1909.	20%	₱120.

* John T. Macleod's share list.

PHILIPPINE BONDS

	DATED	AUTHORIZED	ISSUED	OUTSTANDING	PAR VALUE	RATE OF INT.	WHEN PAYABLE	LAST QUOTATION
Philippine Friar Land Bonds	Feb. 1st, 1904	$7,000,000	$7,000,000	$7,000,000	$ 100	4%	Feb. 1, 1914	104½
Public Works and Permanent Improvement Bonds	March 1, 1905	$5,000,000	$2,500,000	$2,500,000	$ 100	4%	March 1, 1915	104½
Do.	Feb. 1, 1906	.....	$1,000,000	$1,000,000	$ 100	4%	Feb. 1, 1916	104½
Manila Sewer and Water Works Improvement Bonds	June 1, 1905	$4,000,000	$1,000,000	$1,000,000	$ 100	4%	June 1, 1915	104½
Do.	Jan. 2, 1907	.....	$2,000,000	$2,000,000	$ 100	4%	Jan. 2, 1917	104½
*Philippine Railway First Mortgage Four per cent Thirty Year Sinking Fund Gold Bonds	July 1, 1907	$15,000,000	$5,736,000	$5,736,000	$1000	4%	July 1, 1937	97

*Payment of interest guaranteed until maturity or redemption by the Philippine Government.

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